

FLIGHT

The
AIRCRAFT
ENGINEER
&
AIRSHIPS

First Aeronautical Weekly in the World. Founded January, 1909.

Founder and Editor : STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

No. 964. (No. 24, Vol. XIX.)

JUNE 16, 1927

Weekly, Price 6d.
Post free, 7d.

Flight

The Aircraft Engineer and Airships

Editorial Offices: 36, GREAT QUEEN STREET, KINGSWAY, W.C.2

Telephone: Gerrard 1828. Telegrams: Truditur, Westcent, London.

Annual Subscription Rates, Post Free.

United Kingdom .. 30s. 4d. Abroad .. 33s. 0d.*

* Foreign subscriptions must be remitted in British currency.

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"FLIGHT" PHOTOGRAPHS.

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DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list :-

1927	
June 4-16....	Fourth International Aero Exhibition, Prague.
June 18	Inst.Ae.S. Visit to Croydon Aerodrome.
June 30	Aviation Ball at May Fair Hotel
July 2	Royal Air Force Display.
July 2	No. 20 Sqdn. R.A.F. Reunion Dinner at Gatti's.
July 9	Air League Challenge Cup at Castle Bromwich, Birmingham.
July 30-....	Bournemouth Meeting (including King's Cup Race).
Aug. 1	
Aug. 10-12	Navy v. R.A.F. Cricket Match.
Aug. 20-	
Sept. 2	International Aero Exhibition, Copenhagen.
Sept. 10	Gordon-Bennett Balloon Race, Denver, U.S.A.
Sept. 25	Schneider Trophy Race at Venice.
Oct. 20	Aero Golfing Soc. (Cillon Cup), Walton Heath.

EDITORIAL COMMENT.



Safe Aircraft

NE might well describe as the first serious attempt to achieve real progress in safe flying the Daniel Guggenheim Safe-Aircraft Competition which is to be held near New York during the next two years or so, and the first prize for which is one of \$100,000 (approximately £20,000). In fact, so difficult are the conditions to be fulfilled that cynics have remarked that aircraft built for the competition will certainly be safe since they will not leave the ground! While this is admittedly a considerable overstatement of the case, there is no denying that the aeroplane as we know it to-day will be hard put to it to comply with the regulations and yet be capable of carrying any paying load (as distinct from the "useful load" as specified in the regulations). It is true that no such paying load is stipulated in the regulations, the aircraft being merely required to carry 5 lbs. of useful load per horse-power, the "useful load" including pilot, observer, fuel and oil for 3 hours at full throttle. Simple as that appears, the performances demanded are such that there will be little to spare for paying load. At first, this may appear somewhat remarkable, but it should be realised that the competition is not designed specifically to produce safe commercial aircraft, but simply safe aircraft of any type.

A résumé of the regulations for the Guggenheim competition is published elsewhere in this issue, from which it will be seen that the main points are that competing aircraft (after complying with the usual airworthiness demands) shall carry a useful load of 5 lbs. per horse-power at a top speed of at least 110 m.p.h. and a low speed of not more than 35 m.p.h., with a rate of climb of 400 ft. per minute at 1,000 ft. Machines fulfilling these conditions are then required to carry out a series of performance tests to demonstrate controllability in power-driven flight and during glides.

Briefly enumerated, the performance tests are as follows: Demonstrate ability to fly level at not more than 35 m.p.h.; be able to glide for 3 mins. with

power switched off, the air-speed not to exceed 38 m.p.h.; land with power switched off and come to rest after run not exceeding 100 ft.; land over 35 ft. obstacle with power switched off, and come to rest within 300 ft.; take off after run of not more than 300 ft., clearing a 35 ft. obstacle in distance of 500 ft. from starting point; glide with power switched off, at an angle of not more than 8 degrees (flat glide); glide, with power switched off, at angle of not less than 16 degrees (steep glide).

Stability in normal flight, and ability to recover from abnormal conditions are further features aimed at, and the following demonstrations are demanded: Machine to be provided by means for trimming at any speed from 45 to 100 m.p.h., with elevator free, at any throttle opening. Movement of elevator to its two extremes to be followed by automatic recovery of machine; the machine to be able to fly for 5 mins. in gusty air at any throttle opening with all controls left free. When power is switched off suddenly, the machine is to take up a steady gliding attitude, and when power is switched off with control stick right back, the machine must remain under control, and descend on a steep glide path at not more than 40 m.p.h. From a dive at 20 per cent. above top speed machine must flatten out of its own accord, and must also be able to fly at full throttle at speed of 45 m.p.h., trimmed for any speed between 45 and 75 m.p.h., and the pilot is to work the controls in such a manner as to attain an abnormal attitude, recovery to be made with the aid of the controls with a loss of height of not more than 250 ft. Effectiveness of controls is also to be demonstrated by sharp movements and manœuvres, as well as manœuvrability on the ground.

From the foregoing it will, we think, be clear that no aeroplane as we know it to-day will have much chance in the competition. To begin with, a speed range of 35 to 110 m.p.h. will put the designer on his mettle, apart from any other consideration. Add to this the fact that he is restricted in power to carry 5 lb. per h.p. "useful load," in addition to the weight of the machine, and one is faced with quite a pretty little problem. How the unfortunate designer is going, in addition, to provide for flat glides and steep glides, recovery from abnormal attitudes, full-power flight at 45 m.p.h., fast glides and slow glides, we do not profess to know. It would seem that the "Autogiro" might possibly fulfil the speed-range requirements, but whether or not it will also be able to meet the other demands may, perhaps, be doubtful.

The competition closes in 1929, and, frankly, we doubt whether even by then a machine will be produced that can fulfil the qualifying requirements, let alone have any hopes of scoring points by extra performance. £20,000 is a very handsome prize, but it will cost a firm a good deal more than that to produce a machine that shall have even a small chance of succeeding. Probably the standing question among aircraft folk for the next two years will be "Are you entering for the Guggenunc competition?"

The King's Cup Race

We cannot pretend that we are in agreement with the Royal Aero Club in its choice of a course for the race for the King's Cup, to be flown on July 30. A 25 miles course around the Bournemouth district is all very well for an ordinary air race meeting, but

the race for the King's Cup is the race of all air races from which the country as a whole is entitled to expect to be given an opportunity to see the machines. We do not doubt that, financially, it will pay handsomely to hold the race as planned. The cost of the organisation is practically nil, and on that date there will, doubtless, be crowds at Bournemouth, of whom a large percentage will flock to the Ensbury Park racecourse. But from every other point of view, we hold, the course planned is wrong. If there are many entries, as doubtless there will be, a 25 miles' course is too short to avoid "bunching." The course is either too short or too long. Too short to give reasonable spacing between machines, too long for the machines to be in view the whole time. That competitors will be rounding the turning point at Ensbury Park at frequent intervals is interesting from Bournemouth's point of view, but not of much use to the rest of the country.

And why Bournemouth, anyway? The town itself does not seem to want air races. Certainly not Sunday air races. The "aerodrome" does not fall under Bournemouth's jurisdiction, and so Bournemouth cannot say yes or no, but so far the town does not appear to have taken air racing to its heart, and still seems to regard it much as it would an Inn that, by some freak of legislation, was enabled to keep open when those in the town were closed. As a commercial undertaking the race for the King's Cup as planned for this year may have much to recommend it. From every other point of view, it has nothing. And in any case, is not that rather a low level upon which to place a race for a Cup presented by His Majesty the King? Let us try to make ends meet in all other air races of the year, by all means, but surely for this one race we could, and undoubtedly ought to, do better than that.

The Flights towards India

At the time of going to press with this week's issue of FLIGHT, unfavourable winds have prevented the start of the second British attempt to beat the world's distance record by flying from Cranwell, Lincolnshire, to "somewhere in India." The second Hawker "Horsley" day-bomber, with Rolls-Royce "Condor" engine, is identical with the machine on which the first attempt was made, and which failed, it is believed, owing to the formation of an air lock in the petrol system, except for certain minor alterations. Among these are a change in the petrol supply system, which will, it is hoped, effectively prevent the possibility of an air lock forming, and a radiator of semi-circular form in place of the rectangular radiator fitted on the first machine. In all other respects the second long-distance "Horsley" is identical with the first, both being, of course, perfectly standard service machines except for the extra petrol tanks necessitated by the long duration.

We are sure all our readers will join with us in wishing Flight-Lieuts. Carr and Mackworth all possible luck on their flight, which will in all probability have commenced, and may even be completed, by the time FLIGHT reaches our readers.

We are equally certain that all will regret, with us, the untimely stop which was put to the attempt of our French friends with the crashing of the S.E.C.M. biplane flown by Pelletier D'Oisy and Gonin. One very gratifying aspect of the accident was that both escaped unhurt, and nobody will rejoice in that fact more than the British aviation community.

THE KING'S CUP AIR RACE

WE give below the preliminary arrangements for the King's Cup Air Race (under the Competition Rules of the Royal Aero Club) for the Cup presented by His Majesty the King, and £100 presented by Sir Charles Wakefield, Bart.

The King's Cup will be awarded to the Entrant of the Aircraft which wins the Handicap Race organised under the following conditions:—

SUPPLEMENTARY REGULATIONS

1. *Date*.—The race will be held on Saturday, July 30, 1927. The starting time will be announced later.

2. *Organisation*.—The race will be conducted by the Royal Aero Club under its Competition Rules.

3. *Competitors*.—The entrant and pilot or pilots must be British subjects. The entrant must be an individual and not a company. The word "competitor" includes the entrant and all persons taking part in the race except passengers.

4. *Aircraft*.—The race is open to any type of aircraft. The aircraft, including the engine or engines, must have been entirely constructed in the British Empire.

5. *Entries*.—The entry fee is £2. This fee, together with the entry form complete with all particulars duly filled in, must be received by the Royal Aero Club, 3, Clifford Street, London, W.1, not later than 5 p.m. on Friday, July 15, 1927. The entrant is responsible for the accuracy of all particulars supplied by him to the Club relating to the aircraft and engine. The officials may require the entrant at his own expense to submit the aircraft, including the engine or engines or any part thereof, for examination in order to verify these particulars.

6. *Air Navigation Regulations*.—Competitors must comply with the Air Navigation Regulations in force, subject to any concessions which may be made by the Air Ministry for the race.

Certificate of Airworthiness.—A Certificate of Airworthiness for the aircraft must be obtained and produced to the Royal Aero Club one week before the date of the race.

7. *Course*.—The total distance of the race is 535½ miles, divided into three stages of 178½ miles each.

Each stage of 178½ miles consists of seven circuits of a triangular course of 25½ miles, i.e., Bournemouth, New Milton, Ringwood:—

Distances: Bournemouth to New Milton ..	10¼ miles.
New Milton to Ringwood ..	8¼ "
Ringwood to Bournemouth ..	7 "

8. *Turning Points*.—Bournemouth.—Ensbury Park Racecourse—a white cross.

New Milton.—The Water Tower on the Railway line (Red Tower).

Ringwood.—The Western Gasometer to the South of Ringwood.

The course will be flown anti-clockwise, and competitors must pass the turning points, leaving them on their left.

9. *Completion of Stages*.—On the completion of each stage (seven circuits) the competitor must alight on the racecourse at Bournemouth and make a compulsory stay of 30 mins. Any time beyond the 30 mins. will be counted as flying time. The time of the completion of each stage will be taken at the moment the aircraft passes the finishing line at a height of not more than 500 ft. After passing the finishing line, the pilot must alight and report to the officials in charge. A white flag displayed on the aerodrome will indicate to the pilot the place at which he must report to the officials.

In the interests of safety, pilots must refrain from zooming or suddenly altering their course after passing the finishing

line. They must circle left and land, paying special regard to any aircraft which may have crossed the line before them.

The arrangements for starting on the second and third stages are the same as on the first stage. (Regulation 11.)

Competitors failing to complete the course by 10 p.m. on July 30 will be out of the race.

10. *Handicap*.—The aircraft will be handicapped on a time allowance basis. The handicapping will be by formula, particulars of which may be obtained on application to the Royal Aero Club. Aircraft will be started in accordance with the handicap allowance, and will be timed from the given signal to start.

11. *Starting*.—The position of the starting line will depend upon the direction of the wind, and will be notified to the pilots before the start of the race. Each pilot and his aircraft must be at the place allotted to him on the starting line 10 mins. before his official time of starting. Should any pilot fail to start within 5 mins. of being given the signal to start by the Official Starter, he must remove his aircraft from the starting line if and when so ordered, after which he will only be allowed to start with the sanction of the Official Starter. His time will be taken as from the original signal to start. The Official Starter will stand to the side of the aircraft, selecting his position so that he can best be seen by the pilot. Ten secs. before the time of starting the Official Starter will raise a red flag. At the expiration of this period the Official Starter will lower the red flag smartly to the ground, this being the signal to start. Chocks, if any, must be removed before the flag is lowered. The signal to start will not be given until the chocks, if any, have been removed, and the pilot will lose the time caused by any delay in removal. Any aircraft crossing the starting line before the lowering of the red flag will be disqualified.

Competitors are solely responsible for the observation of these regulations by those in attendance on the aircraft.

12. *Landings*.—Landings between the turning points will not disqualify the aircraft, but all time so spent will be taken as flying time.

13. *Repairs*.—The same aircraft and engine must be used throughout the race, but repairs and replacements are allowed. Spare parts need not be carried on the aircraft. Competitors intentionally discarding, without immediately replacing, any part of the aircraft or engine, or making any modification to the aircraft or engine during the race, will be disqualified. Competitors will be responsible for any infringement of this regulation by third parties.

14. *Identification of Aircraft*.—For the purpose of identification all aircraft must carry the Government Registration Marks as laid down in the Air Navigation Regulations, except in the case of Service aircraft, for which special instructions will be issued.

15. *Verification of Aircraft*.—Aircraft must be at Ensbury Park Racecourse, Bournemouth, completely erected, for verification by the officials, at a time and date to be announced later.

16. *Pilots*.—The pilot or pilots must not be changed during the race.

17. *Fuel Supplies*.—The Royal Aero Club is in no way responsible for the supply of fuel and oil, nor for any delay which may arise in refilling. The competitors themselves must make their own arrangements with the supply companies, who will be given full facilities. The nature of the fuel is at the discretion of the competitor.

The Committee of the Royal Aero Club reserves to itself the right to add to, amend, or omit any of these Regulations should it think fit.



Newcastle's Air Pageant

THE Newcastle Aero Club held their flying meeting at Cramlington Aerodrome on June 11, and it was attended by a crowd estimated at 20,000. Sir Sefton Brancker, Director of Civil Aviation, was there. The programme was packed with thrills, although the most thrilling incidents were not provided by flying stunts. A Boulton and Paul two-seater machine, with no pilot aboard, ran away towards a row of light 'planes waiting to start in a race. By the prompt action of Sqdn.-Leader Rea, however, the machine was swung round, and danger to the other machines was averted, but disaster overcame the rebellious B. & P., for it went up on its nose, smashing the propeller, and then turning on its back. For some seconds the engine raced upside

down. The undercarriage was smashed and the top wing damaged. Amongst the competitors were the Hon. Lady Bailey and Mrs. Elliott-Lynn, and the former won the private owners' handicap race, which was flown in two heats. In the second heat Lord Ossulston was second, and in the final Lady Bailey beat Sqdn.-Leader Rea. Capt. F. M. Sparks, of the London Aeroplane Club, won the pilot instructors' race for the President's Cup by a hundred yards. The inter-club relay race was won by the London Club, with Newcastle second, and the Yorkshire Club third. Through a series of accidents Mrs. Elliott-Lynn was forced to remain a spectator some of the time. On one occasion the crowd surged through the barriers in thousands and racing had to be stopped for an hour.

THE WRIGHT J-5 "WHIRLWIND"

An American Engine Which Has Made History

In our issue of last week we were able to give a very complete set of curves relating to the Ryan monoplane on which Capt. Lindbergh flew from New York to Paris, but it was pointed out that these curves did not, except by inference, tell one very much about the engine. We have since received from the Wright Aeronautical Corporation of Paterson, New Jersey, U.S.A. particulars of the Wright "Whirlwind" engine used not only by Lindbergh, but also by Chamberlin in his flight in the Bellanca monoplane from New York nearly to Berlin.

Before giving a description of the technical features of the Wright "Whirlwind" a few notes on the history of the engine and some of its performances to date may not be without interest. We, therefore, quote from the Wright Bulletin No. 16, the following passages:

"Whirlwind" History

"The current Wright 'Whirlwind' model J-5 is the result of seven years' intensive development on one type of engine without alteration in bore and stroke and without changing any basic feature of the original design. The development contract under which this series of models began was dated February 28, 1920. Since that time seven successive models have been developed and over a thousand engines sold, practically all going into immediate service where thousands of flying hours have been accumulated. This service testing in the hands of the United States Navy and many commercial interests has resulted in a wealth of practical experience and technical data, which has formed the ground work for further improvement in detailed design. These improvements have first been developed and tested in the laboratory through extensive dynamometer trials and later supplemented by flight tests where average service conditions were simulated. When conclusively proven, the changes have been definitely adopted as standard and made a feature of the next production run of engines.

"This policy of gradual improvement and perfection has resulted in a sound development where each successive model has contained improvements dictated by service experience with the preceding engine, and in which each model has been uniformly successful.

"In 1916 Mr. Charles L. Lawrance started a development of air-cooled engines of small power. His early experiments led him to the belief that larger powers could be successfully constructed, and it was largely through his efforts that an experimental contract for the development of a 9-cylinder, 140 h.p. air-cooled radial engine was awarded by the United States Army early in 1920. Immediately thereafter the United States Navy also gave Mr. Lawrance a contract for a similar type of engine to have a guarantee of 200 h.p. at 1,800 r.p.m. These two engines were developed simultaneously and both passed their fifty-hour acceptance tests early in 1921. This second engine, designed and constructed for the United States Navy, was the fore-

runner of the now famous Wright 'Whirlwind' engines, having a bore of 4½ ins. and a stroke of 5½ ins., and rated at 200 h.p. at 1,800 r.p.m. Since that time seven successive models have been produced without alteration in the basic design. These models have been the J-1, J-2, J-3, J-4, J-4A, J-4B and J-5. Each model has been produced in quantity for the United States Navy before being released for commercial sale. In this way commercial aviation in the United States has been given the benefit of time-tested engines of a design already approved and tried by the United States Navy. The current models, J-5c and J-5ca, combine all the experience with the preceding engines and constitute a refinement which goes far beyond their capabilities.

"It is the policy of the Wright Company to incorporate engine improvements and minor new developments in their engines as rapidly as possible. To designate each factory run of engines of exactly the same detailed design, capital letters are added to the basic model designation. In this way the model J-4A was a refinement of the model J-4, and in a similar way the models J-5c and J-5ca indicate minor modifications of the basic model J-5 design."

Some Whirlwind Performances

All our readers will be acquainted with the fact that it was the Wright "Whirlwind" engine that was used by Lindbergh and Chamberlin in their transatlantic flights. Commander Byrd, who is reported also to be contemplating a transatlantic flight (in a three-engined Fokker monoplane) has also chosen this engine (or rather, three of it!) for his venture. This was but natural since three of these engines carried him and Mr. Floyd Bennett to the North Pole and back safely on May 9 last year. Other important flights made by machines fitted with the Wright "Whirlwind" engine have included the following:

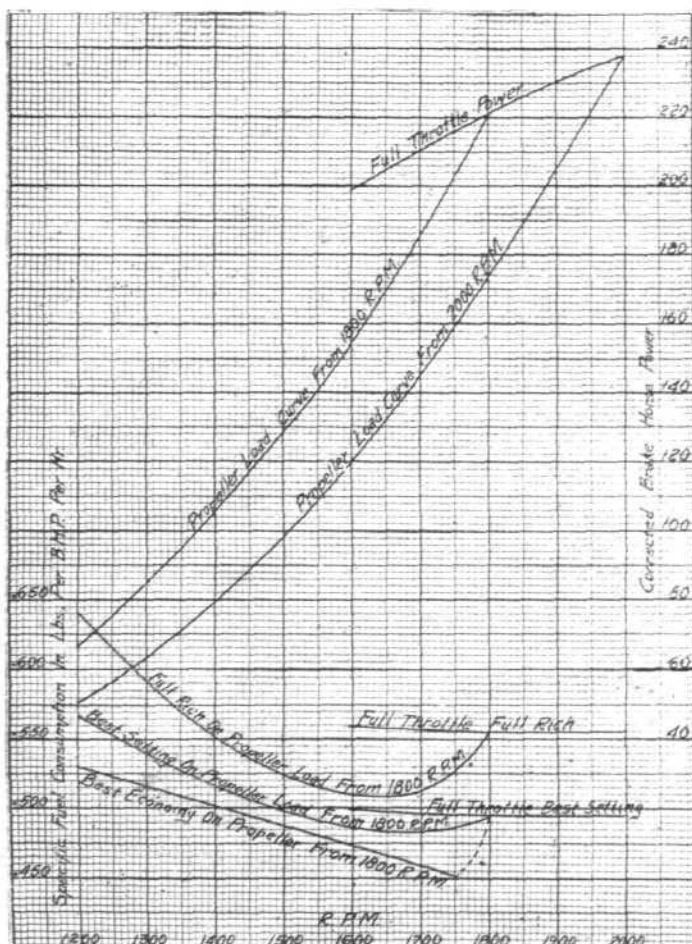
The world's duration record without alighting of 51 hrs. 11 mins., made on April 14 this year by Chamberlin and Acosta in the same Bellanca monoplane on which Chamberlin and Levine recently crossed the Atlantic. Won first, second and third places in the Second (American) Annual Aeroplane Reliability Tour of 1926, the route of which was over 2,500 miles long, and the machines being: First, the Travel Air, with 600 lbs. pay load, 124.5 m.p.h.; second, Buhl Airster, 800 lbs. pay load, 113.5 m.p.h.; third Stinson-Detroit, 640 lb. pay load, 106.7 m.p.h. Won Transport Race at the National Air Races at Philadelphia in 1926, in a Wright-Bellanca monoplane carrying 1,607 lbs. pay load (8 lbs. h.p.!) at 121.5 m.p.h. Won twelve out of eighteen prizes at Philadelphia National Air Races in 1926.

During 1926, "Whirlwind" engines flew 1,750,000 miles in safety on commercial air routes in the United States and Canada, and including engines bought by the United States Army and Navy, more than 1,000 "Whirlwind" engines have been sold to date.

Technical Details

The Wright "Whirlwind" engine, in all its variations or models, is a radial air-cooled engine with 9 cylinders evenly spaced around a cylindrical crankcase. The latter is of aluminium alloy, with front cover removable, but with back cover cast integral with the crankcase barrel, and containing the ducts of the induction system. The earlier models of the "Whirlwind" had aluminium cylinders shrunk and threaded on to a steel sleeve, this construction being regarded as somewhat cheaper than the method of forming the cooling fins on the steel barrel. In the J-5 model, however, which was the one used by Lindbergh and Chamberlin, the cylinder construction has been altered, this change, in fact, being the most important one between the J-4B and the J-5 models. In the latter the cylinder is built in two parts, the steel cylinder barrel with integral steel cooling fins machined out of the barrel forging; and the cast aluminium alloy head screwed and shrunk on to the top of the barrel. In this way a more direct heat transference is attained. The combustion chamber in the cylinder head is hemispherical in form and the inlet and exhaust valves are set at an angle of 70°, with their heads flush in the combustion chamber. The exhaust valve is of the salt-cooled type, as referred to by Mr. Charles L. Lawrance in the paper which he read before the Royal Aeronautical Society on February 4, 1926. With this form of valve the stem is drilled through its length, the opening being filled with potassium nitrate and sodium nitrate.

The cylinder head of the J-5 model permits of larger valves, with consequent improvement in the full throttle volumetric efficiency, and the design gives an increased area of fins around the valve ports, thus improving the cooling. It is claimed that the new cylinder and cylinder head construction is largely responsible for the improved fuel economy of the J-5 model, which on a 50-hour full-throttle endurance test averaged 0.458 lb. hp./hr., with an output of 216 h.p. at 1,827 r.p.m.



THE WRIGHT "WHIRLWIND" ENGINE: Power curves of models J-5C and J-5CA.

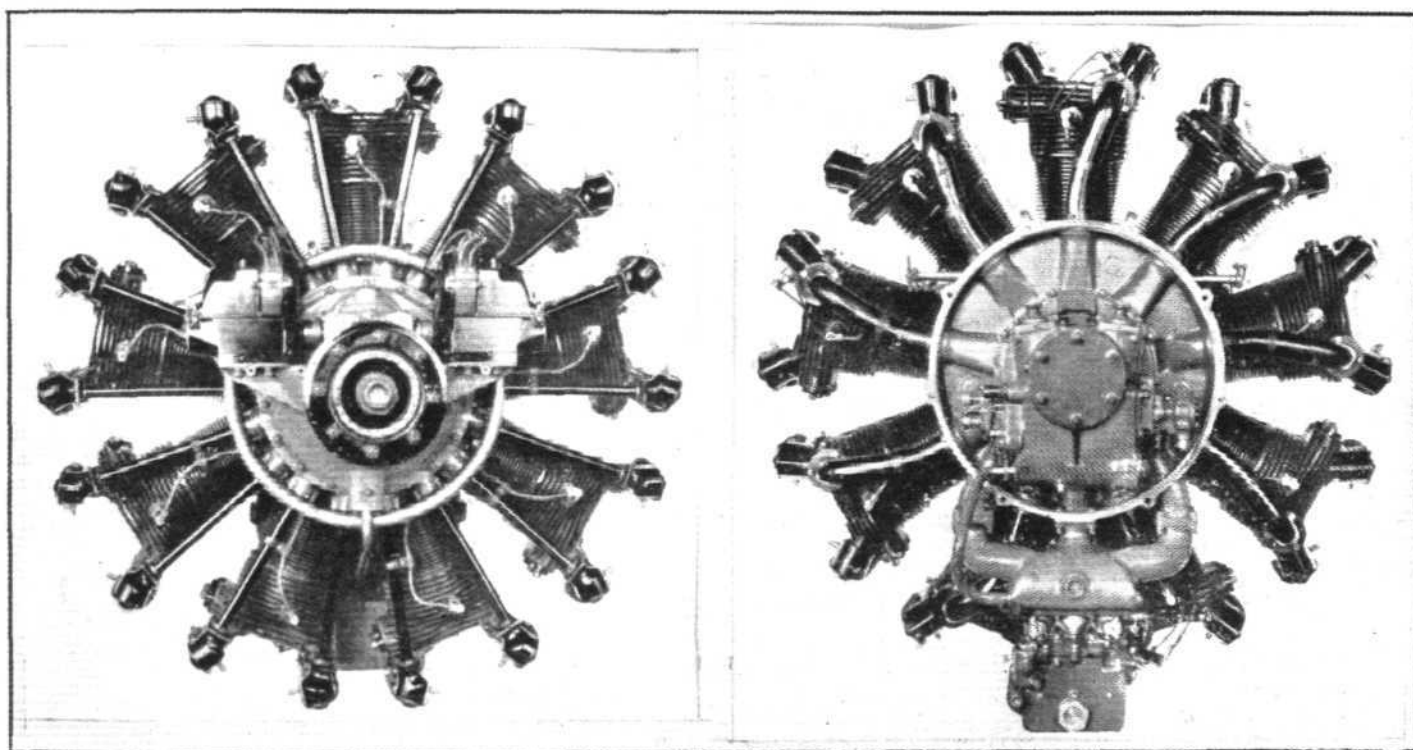
The valve gear of the model J-5 is enclosed, thus preventing entrance of dust and dirt to the moving parts, as well as the blowing away of the lubricants from the bearing surfaces. The rocker arm has been generously increased in size, and has been provided with improved bearings and lubrication. The rocker arm roller has been enlarged, and is made of heat-resisting alloy steel, which reduces wear at this point. The valve clearance adjustment has been moved from the push rod, and is now incorporated in the rocker arm itself, where micrometer divisions provide an easy and convenient means of adjustment without the use of feelers. The push-rod ball end fits into an easily replaceable socket made of ball-bearing steel; this socket in turn is housed in an adjusting seat screwed into the rocker arm end. The adjustment is locked in place by a suitable clamping screw on the end of the rocker arm. The push rods are made of nickel steel tubing, and are provided with ball ends, also of ball-bearing steel. These ball ends, and their sockets in the rocker arm, are twice the area of those on the model J-4B, giving a large increase in contact area.

The connecting-rod assembly of the "Whirlwind" engine was described and illustrated in Mr. Lawrence's paper, and

soon make their appearance, unless the engine is now as good as it is humanly possible to make it!

Some Endurance and Overload Tests

THE endurance tests on the model J-5 engine have been exceptionally severe. Three fifty-hour endurance tests have been run on this engine, in addition to approximately 100 hours of miscellaneous calibration and fuel-consumption tests. The first fifty-hour endurance test was run at 1,970 r.p.m. at full throttle, giving an average mean effective pressure of 121 lb./sq. in. The average power developed during this test was 238 b.h.p., and the fuel consumption was .508 lb./h.p./hr. The second fifty-hour test was run at 1,827 r.p.m. at full throttle, and showed an average power of 216 b.h.p., with a fuel consumption averaging 0.458 lb./h.p./hr., and a M.E.P. of 119 lb./sq. in. The third fifty-hour endurance test was made with the object of determining the reliability of the engine under overload conditions. To this end an external supercharger was provided, arranged so as to force air into the carburettor. No other change was made in the engine itself. In spite of the fact that this test was carried out during the hottest part of the summer, with the air temperature averag-



THE WRIGHT "WHIRLWIND" ENGINE: Front and back views of type J-5C and J-5CA.

as far as we are able to discover, this has not been altered in the J-5 model. It consists of a master rod of H section, with link rods of tubular section.

The model J-5 has also been provided with a new type of carburettor, which incorporates in a single unit three barrels supplied by a common float chamber, each barrel communicating with three cylinders through a separate manifold. This arrangement results in improved distribution, and has had its effect on the lower fuel consumption of the engine. The average "best setting" full-throttle consumption of a large number of production engines varies from 0.49 to 0.51 lb./h.p./hr.

Although the J-4 is a new model, improved modifications are already in existence. Thus the J-5C incorporates a piston of slightly different design from that used in the original J-5. The change permitted the use of a permanent mould in casting, and at the same time the compression ratio was altered, so as to allow of the use of a wider range of commercial petrol. In addition, the priming system of the J-5C now directs the raw fuel into the intake passages in the crankcase, thus eliminating the danger of washing the lubricant from the cylinder walls. The changes between the models J-5C to J-5CA are of a very minor character. Fabric-covered rubber insulated ignition wire is used, and the two crankshaft roller bearings, are replaced by molybdenum steel ball bearings. At the moment the J-5CA is believed to be the latest version of the "Whirlwind," although doubtless other models will

ing 150° F. at the point of entrance to the carburettor, the engine ran 50 hours without difficulty, averaging 295 b.h.p. at 2,150 r.p.m., and with a fuel consumption of 0.510 lb./h.p./hr.

In May, 1927, the U.S. Navy completed a 100-hour non-stop run on a stock "Whirlwind" engine, the test being run continuously at full throttle, averaging 223 h.p., and a fuel consumption of 0.53 lbs./h.p./hr. and an oil consumption of 0.023 lb./h.p./hr.

The "Whirlwind" engine fitted in the Bellanca monoplane which established a duration record of 51 hours 11 mins., had already been run for 179 hours 53 mins. During the record flight 385 gallons of petrol and 4.93 gallons of oil were used, corresponding to an hourly petrol consumption of 7.5 gallons and an oil consumption of rather less than a pint.

Power Curves

Concerning the power and propeller load curves given herewith, the makers of the Wright "Whirlwind" engine point out that these refer to the models J-5C and J-5CA, and that the curve marked "Full Throttle Power" shows the average maximum power at the speeds indicated. An individual engine may vary from two to three per cent. above or below this value.

At the full rich setting of the mixture control, the fuel consumption at full throttle is indicated by the curve marked "Full Throttle Rich." The leanest position of the mixture control at which the engine turns maximum revolutions is

shown by the curve marked "Full Throttle Best Setting." Hence, by the use of the mixture control, at full throttle, with the engine turning 1,800 r.p.m., the fuel consumption can be varied between 0.555 and 0.495 lb./h.p./hr. without losing any revolutions. An engine fitted with a propeller turning 1,800 r.p.m. at full throttle will, when throttled to any given speed, develop the power shown on the propeller load curve. If the full throttle power is not 1,800 r.p.m., the propeller load curve will start from the point on the power curve corresponding to the maximum revolutions per minute, and will be similar in form to the propeller load curve drawn from 1,800 r.p.m.

The fuel consumption on the propeller load curve is given by the three curves marked "Propeller Load." The upper curve shows the consumption obtained when the mixture control is left in the full rich position. The middle curve indicates the fuel consumption when the mixture control is set to the leanest possible position with the engine still turning maximum revolutions per minute, and left in this position while running at part throttle. The lowest curve gives the lowest petrol consumption at which the engine will operate smoothly. To obtain these lowest readings, the throttle must be set with the mixture control at full rich to give a speed of 30 r.p.m. above the desired speed. The mixture control should then be pulled back until the engine

loses 30 r.p.m. The fuel reading will then correspond to the lowest of the propeller load fuel consumption curves.

The maximum revolutions per minute on the fuel consumption curve must correspond with the full throttle revolutions per minute of the propeller load curve. From this point, the fuel consumption curves will be similar in form to the curves drawn from 1,800 r.p.m.

To convert the specific fuel consumption into gallons per hour, multiply the specific consumption (in pounds per horse-power hour) by the horse-power which the engine is developing, and divided by 6, the weight in pounds of one gallon of petrol. (This refers, of course, to American petrol and American gallons. The American gallon is 0.83254 of our own.)

Specification of J-5C and J-5CA Models

Type: 9-cylinder, radial air cooled; bore, 4.5 ins.; stroke, 5.5 ins.; Capacity, 788 cub. ins.; compression ratio, 5.2:1. Guaranteed power at sea level, 200 b.h.p. at 1,800 r.p.m. Weight, dry, 508 lbs. (average). Length overall, 34 ins.; overall diameter, 45 ins. Distance from mounting flange to end of propeller hub, 27.75 ins. Guaranteed fuel consumption, not more than 0.60 lbs./h.p./hr. at rated power. Guaranteed oil consumption, not more than 0.025 lbs./h.p./hr. at rated power.

THE PRAGUE AERO SHOW

Some of the Czechoslovak Exhibits

(Continued from page 384.)

LAST week we briefly described some of the "Avia" machines exhibited at the Prague Aero Show, and this week we conclude with particulars of the other "Avia" types exhibited by the firm of Milos Bondy. Following this we give some notes and illustrations of the "Aero" exhibits, constructed by the Aero Aircraft Factory of Prague.

The "Avia" Commercial and Military Machines

For commercial work there is the B.H.25, which is a 5-8 passenger cabin biplane that has been specially designed to meet the requirements for passenger transport in Central Europe. It can be equipped with any make of engine of from 400 to 600 h.p., either of the broad arrow water-cooled type or the radial air-cooled type, as the engine unit forms a separate unit, built up of steel tubes with removable cowling, so designed to accommodate either type.

It is a single bay biplane of orthodox wood, plywood and fabric construction. The top plane is in three sections—two outer, carrying the petrol tanks, and a centre section mounted on the fuselage—while the lower plane is in two sections attached direct to the lower longerons of the fuselage.

Ailerons are fitted to all four wings, and the tail plane is adjustable as to incidence from the pilot's cockpit. All control surfaces are of wood and fabric construction, and the cables are mainly outside, and are thus easily accessible.

The fuselage is of wood construction with plywood covering, and without wire bracing. The pilot's cockpit is located in front of the wings, immediately behind the engine, from which it is separated by a fire-proof wall. On the pilot's right is a seat for a mechanic or wireless operator (or passenger), while behind is a small sliding window communicating with the passengers' cabin. The latter is roomy and comfortable, accommodating six persons, seated in rocking chairs at the walls of the cabin, where a good outlook is obtained through circular windows (sliding "Triplex"). The interior is upholstered, and entrance is gained by means of a door at the rear (on the left), which is close to the ground when the machine is at rest.

In the roof is a "Cellon" skylight which can also be used as an emergency exit, while light luggage racks are also provided. Behind the cabin is a lavatory and luggage compartment, extra luggage being stored below the pilot's cockpit.

A sturdy undercarriage is provided, fitted with enclosed rubber disc shock-absorbers. The latter work in compression and provide for long travel and good recoil, so that the machine will not bounce when roughly landed. The tail skid is also strong, and consists of a steel tube carrying an interchangeable shoe of mild steel, and a strong spiral spring.

The B.H. 25 is very stable at every angle or speed, being



THE PRAGUE AERO SHOW: The Aero A-11 two-seater reconnaissance biplane (240 h.p. Walter), constructed by Aero Tovarna Letadel, of Prague.

almost stall-proof. It takes off quickly and climbs well, while having a low-landing speed it can be used on comparatively small aerodromes. It also has a large reserve of power, which makes for economic running.

The characteristics of the B.H. 25 are:—Span, 15.3 m. (50 ft.); length, 12.82 m. (42 ft.); wing area, 62.5 sq. m. (672.5 sq. ft.); weight empty, 450 Lorraine—1,950 kg. (4,299.7 lb.); 430 "Jupiter"—1,800 kg. (3,969 lb.); total weight, Lorraine—2,970 kg. (6,548.8 lb.); "Jupiter"—2,900 kg. (6,394.5 lb.); wing loading, Lorraine—47 kg./sq. m. (9.6 lb./sq. ft.); "Jupiter"—46.5 kg./sq. m. (9.5 lb./sq. ft.); power loading, Lorraine—6 kg./h.p. (13.2 lb./h.p.); "Jupiter"—6.7 kg./h.p. (14.7 lb./h.p.); speed range, Lorraine—60—190 k.p.h. (37—118 m.p.h.); "Jupiter"—50—185 k.p.h. (31—114.7 m.p.h.); ceiling, 4,500 m. (14,760 ft.); range, 480 km. (297.6 miles); factor of safety, 8.

Of the military machines, the B.H. 33 is a high performance, single-seater fighter biplane, and an entirely new type developed from the B.H. 21, but considerably modified, being redesigned around the new Bristol "Jupiter VI." Of somewhat similar design and construction is the B.H. 26, which is a two-seater fighter, also fitted with the "Jupiter VI."

Both machines have single bay wings of wood construction, with two box spars and plywood covering from the leading edge to the rear spar; the wing is also covered all over with fabric. Ailerons are hinged to the lower planes, those on the B.H. 26 being balanced, and the top plane is in one piece. The wing bracing is by N-struts and streamline

control is fitted, and the tail plane is adjustable from the pilot's cockpit.

The characteristics of the B.H. 28 are:—

Span, 11.8 m. (38 ft. 9 ins.); wing area, 36.5 sq. m. (392.7 sq. ft.); weight empty, 1,150 kg. (2,535.7 lbs.); total weight, 1,930 kg. (4,255.6 lbs.); wing loading, 52.5 kg./sq. m. (10.7 lbs./sq. ft.); power loading, 5.3 kg./h.p. (11.6 lbs./h.p.); speed range, 70—225 k.p.h. (43—146 m.p.h.); climb to 5,000 m. (16,400 ft.), 25 mins.; ceiling, 6,000 m. (19,680 ft.); range, 3—5 hrs.; factor of safety, 10.

Aero Tovarna Letadel

Aero Tovarna Letadel, or the "Aero Aircraft Factory," are responsible for the following two military-type aeroplanes, the A-11 and the A-30, of which the former has a number of record flights to its credit. As both types figured in the last Paris Aero show, and were dealt with in *FLIGHT* at the time it will not be necessary here to refer to these machines in detail.

The A-11 is a two-seater reconnaissance tractor biplane, in which three types of engine may be installed—the 240 h.p. Walter, the 240 h.p. Perun II, or the 300 h.p. Hispano-Suiza, all water-cooled V engines. Except for the different engines all three are generally similar in design and construction.

As far as type is concerned the A-11 is a comparatively large-span biplane with single-bay bracing, the top plane having a larger span and chord than the lower one. Both planes are without dihedral angle, the upper wings being attached



THE PRAGUE AERO SHOW: The Aero A-30. This is a long-distance two-seater reconnaissance biplane, similar to the A-11, but fitted with a 450 h.p. Lorraine-Dietrich engine, or engine of equal weight and power.

wires. The engine mounting is of steel tubing, with four-point and quick release attachment.

The characteristics of these two machines are:—

B.H. 26.—Span, 108 m. (35 ft. 6 ins.); wing area, 31.45 sq. m. (338.4 sq. ft.); weight, empty, 1,030 kg. (2,271 lbs.); total weight, 1,630 kg. (3,594 lbs.); speed range, 86—242 k.p.h. (53—150 m.p.h.); climb to 5,000 m. (16,400 ft.); 15 mins. 50 secs.; ceiling, 8,000 m. (26,240 ft.); range, 2 hrs. factor of safety, 11—13.

B.H. 33.—Span, 8.9 m. (29 ft. 2 ins.); wing area, 22 sq. m. (236.7 sq. ft.); weight empty, 830 kg. (1,830 lbs.); total weight, 1,230 kg. (2,712 lbs.); speed range, 78—266 k.p.h. (48—165 m.p.h.); climb to 5,000 m. (16,400 ft.), 8 mins. 50 secs.; to 7,000 m. (22,960 ft.); 16 mins.; ceiling, 10,000 m. (32,800 ft.); range, 2 hrs.; factor of safety, 12—14.

The third military Avia machine is the B.H. 28 two-seater reconnaissance biplane, a modified edition of the B.H. 26, fitted with a 385 h.p. Siddeley "Jaguar." It is of the orthodox single-bay Avia type, and except for certain details introduced to meet the requirements of reconnaissance work, is similar to the other Avia types.

The wings are of the same wood construction, the top plane being in three sections and the lower one in two. They are of a high lift cross section, with uniform thickness up to the struts, thereafter tapering to the tips. Balanced ailerons are hinged to the lower plane only.

As in the other machines, the fuselage is of wood and plywood construction, with steel-tube engine mounting. The seats are arranged in tandem with the observer at the rear, provided with the usual gun ring, camera and wireless. Dual

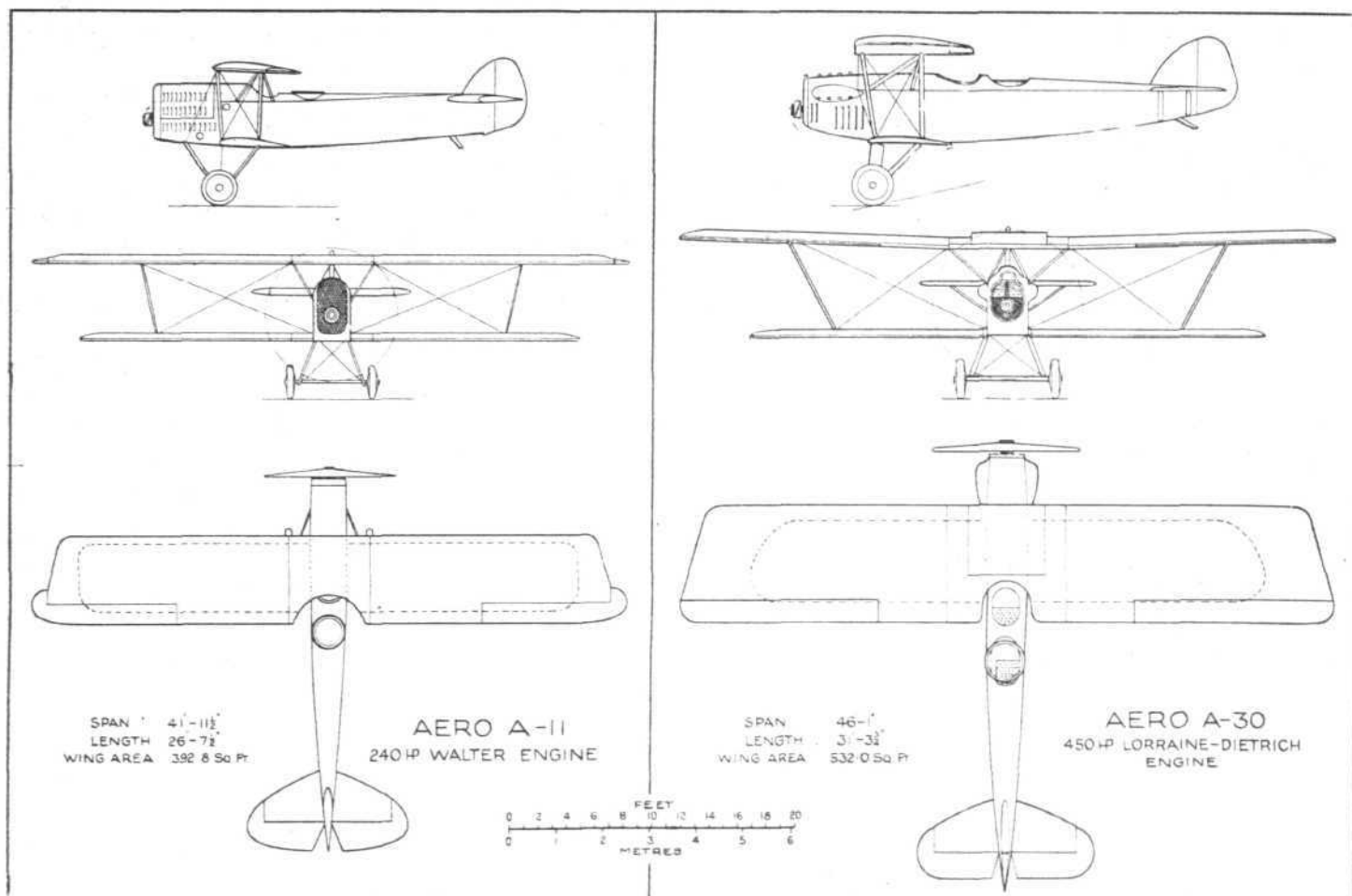
to a centre section (which also carries the service petrol tank) and the lower wings direct to the fuselage. They are of normal wood-and-metal fittings construction, with spruce spars and ply ribs, fabric covered. The ailerons, of steel tube construction, are balanced and fitted to the top plane only. The angle of incidence of the tail plane can be adjusted during flight.

The fuselage is of steel tube construction with fabric covering, except for the engine section, which is enclosed by an aluminium cowling. The cockpits are arranged in tandem, with the pilot in front and the observer behind, with the usual gun mountings. Dual control is provided, the observer's joy-stick being detachable and, when not in use, is carried in clips on the side of the cockpit.

The equipment includes, in addition to the two guns mounted on the movable ring on the observer's cockpit, a fixed machine gun firing forward, camera gear, wireless, parachutes, etc. The main petrol tank, of 185 litres capacity, is located in the fuselage immediately behind the engine, and with the 120 litres of the service tank, the total petrol carried is thus 305 litres.

The principal characteristics and performance of the A-11 are:—

Span, 12.7 m. (41 ft. 11½ ins.); length, 8.12 m. (26 ft. 7½ ins.) height, 3.1 m. (10 ft. 2 ins.); wing area, 36.5 sq. m. (392.8 sq. ft.); weight, empty, 1,027 kgs. (2,264.5 lbs.); total weight, 1,534.3 kgs. (3,383.1 lbs.); wing loading, 42 kg./sq. m. (8.6 lbs./sq. ft.); power loading, 6.4 kg./h.p. (14.1 lbs./h.p.); speed, 215 k.p.h. (130 m.p.h.); climb to 5,000 m. (16,400 ft.), 19 mins. 20 secs.; ceiling, 7,600 m. (24,928 ft.); range, 3½—6 hrs.



THE AERO A-11 AND A-30 RECONNAISSANCE BIPLANES: General arrangement drawings to scale.

The A-30, which is a long-distance two-seater reconnaissance biplane, is similar in most respects to the A-11 type, but is slightly larger. It is fitted with a 450 h.p. Lorraine-Dietrich engine, but other makes of similar weight and power, such as the 450 Hispano 450 Napier "Lion," 480 Renault, etc., can also be installed. In construction it is practically identical to the A-11, the wings being of the usual wood spar-and-rib-cum-metal fitting, and the fuselage of steel tube. As regards the latter, it may be mentioned here that welding is not employed in parts that have to resist any severe stress. The steel tube engine mounting is detachable, thus facilitating change of power plant.

Special attention has been paid to the arrangement of the pilot's instruments, which are within easy reach and observation. The armament consists of a fixed Vickers gun firing forward, and two Lewis guns mounted on a gun ring for the observer. The wireless and photographic gear are mounted in accessible positions in the observer's cockpit.

Unfortunately, performance figures for the A-30 are not available, but the principal characteristics are:—

Span, 14.05 m. (46 ft. 1 in.); length, 9.55 m. (31 ft. 3 1/4 ins.); height, 3.6 m. (11 ft. 10 ins.); wing area, 49.4 sq. m. (532 sq. ft.); weight, empty, 1,400 kgs. (3,087 lbs.); total weight, 2,438 kgs. (5,376 lbs.); range, 6 hrs.



AVROS FOR THE ARGENTINE: Ten Avro "Gosport" Training machines have just been completed for the Argentine Military Air Service, one of which is shown in our illustration, together with the Argentine representatives who are taking delivery of the machines.

THE DANIEL GUGGENHEIM SAFE-AIRCRAFT COMPETITION

FOR the purpose of achieving a real advance in the safety of flying, the Daniel Guggenheim Fund for the Promotion of Aeronautics, Inc., of America, has decided to award prizes to the value of 150,000 dollars for the above competition, which is to be held on a flying field near New York City, the exact location to be announced on September 1 next, from which date entries will begin to be accepted. The closing date of the competition will be October 31, 1929, or perhaps earlier if the object in view has been achieved, for the tests will be carried on throughout the period. Intending applicants must complete forms (which can be obtained in this country with full particulars from Maj. R. H. Mayo, representative of the Daniel Guggenheim Fund in England, 8, New Square, Lincoln's Inn, London, W.C.2), and send them to the Fund at 598, Madison Avenue, New York, N.Y., with an entrance fee of 100 dollars, which will be returned if the entry is rejected or on acceptance after presentation of machine. The preliminary particulars required include date when machine will be ready for tests in America, three-view drawing, brief technical description of machine, engines used (with details of their official type tests and fuel used), weight estimates and estimates of useful load, and volumetric carrying capacity with horse-power for which same are calculated, and all the usual information that explains the design of the machine. If any secrets need to be preserved the reasons must be given, which will receive consideration. Before the machine is presented for the competition a three-view drawing (with principle dimensions of important parts) and dimensional drawings and details required for verification of stress analysis are required. Stress analysis must be in accordance with the methods approved for civil aircraft by the U.S. Department of Commerce, or by any recognised Government agency responsible for the issue of airworthy certificates, and include a statement as to the materials used and the mechanical properties assumed for them. If fixed wings are not the means of sustentation then stress analysis must show a theoretical basis of the strength calculations for structure as well as the calculations themselves. A balance diagram is necessary. The horse-power of the engine considered will be the rated normal horse-power at full throttle as developed with the same or equivalent accessories used in the type tests, and throughout the tests the revolutions per minute will be limited accordingly. In the competition the fuel used will be the standard fuel supplied by the Fund or that of the same quality used during the type tests of the engine. Mechanical or electrical means of starting up must be installed or, alternatively, if hand starting gear is adopted, it must involve no risk to personnel. Direct pulling over of the propellers by hand for starting is not permitted. Structural strength should be in accordance with the requirements of the U.S. Department of Commerce Air Regulation, but where deviations are made explanations should be furnished with stress analysis. Copies of these conditions can be obtained on request. If landings of considerable vertical velocity are contemplated, then computations for strength of chassis covering this condition must be submitted.

Performance

This will include carrying full load at a maximum speed (corrected to standard air at sea level) of 110 m.p.h. and a rate of climb (at 1,000 ft.) of 400 ft. per min. Useful load will include a pilot, observer, fuel, oil, and any special instruments or equipment required for the competition and fitted by the Fund. A machine will carry 5 lbs. of useful load per horse-power, have a tank capacity for fuel and oil for three hours at full throttle at the normal revolutions per minute as given in the type tests, be fitted with dual control, and for every 10 lbs. of useful load carried in addition to those items just specified there must be at least 1 cub. ft. of cabin or cargo space. The weight of the necessary fire extinguisher will not be included in the useful load.

Safety Tests

In these the use of devices by which the aerodynamic characteristics of the aircraft can be varied in flight will, in general, be permitted. If the device is not automatic and requires operation by the pilot the system must be simple, quick in action, conveniently placed, and must not involve appreciable physical effort by the pilot. If it is considered that the safety of the machine is prejudiced by dependence on the operation of such a device in emergency the machine may have to pass any or all of the safety tests at one fixed setting of the device, in which case the rate of climb test mentioned above must be passed at the same fixed setting of the device.

Speed Tests

These will be conducted with the object of obtaining much lower flying and gliding speeds than are possible today on commercial aircraft. In the minimum flying speed test the machine must maintain level and controlled flight at a speed not in excess of 35 m.p.h., and in the gliding test it must glide for a period of 3 mins. with all power off, during which time the air speed shall never exceed 38 m.p.h. Controls must be effective at these minimum speeds.

In landing tests these shall be made with all power off, and after first touching the ground the machine must come to rest within a distance of 100 ft. being a straight landing, side-slipping or trick flying not being permitted. Braking devices will be allowed providing that control is fully retained until the machine has stopped, and that no serious injury to the surface of the ground results. Also they must not require special equipment which is not carried in flight. In the gliding tests machines must glide in over an obstruction 35 ft. high and land in a straight line with all power switched off, coming to rest within 300 ft. from the obstruction. Again side-slipping or other trick landings are barred, but braking devices are not if fulfilling the conditions just mentioned.

Take-off Tests

In these the machines will take-off after running not more than 300 ft. from a standing start, and will have failed if the ground is once touched after the take-off; then they must clear an obstruction 35 ft. high at a distance of 500 ft. from rest, the approach to the obstruction being straight and not a tricky one. There must be no external assistance for starting the runs.

In the gliding tests the engines must be switched off and the glide be at an angle between the flight path and the horizontal of not more than 8 deg. In the steepest glide with the engines off the angle must not be less than 16 deg., whilst during this test the air speed must not exceed 45 m.p.h. In both cases it must be demonstrated that all the controls are definitely effective throughout the tests and that the machine can land safely out of the glide from a useful altitude.

For stability tests in normal flight means must be provided by which the machine can be trimmed to fly with the elevator control free at any speed within the range of 45 m.p.h. to 100 m.p.h. and at any throttle opening of the engine or engines. For longitudinal stability the elevator control is to be moved towards its maximum extent either backwards or forwards sufficiently to give a fair test of stability, and then released. In either case the machine must return to steady flight in its original attitude within a reasonable time. For general stability it must be capable of flying at any air speed from 45 to 100 m.p.h., and at any throttle opening of the engine or engines with all controls left free for a period of not less than five minutes in gusty air. In multi-engined aircraft all the engines may be throttled to the same extent.

Recovery from Abnormal Conditions

Control must be satisfactory when engine failure occurs, no matter how many engines are used, and a steady gliding attitude follow such failure when all controls are left free. If the elevator control is pulled in toward its maximum extent at the moment of switching off and held in that position the machine must remain under control, not get into any violent or dangerous manoeuvres and descend on a steep glide path at a speed not exceeding 40 m.p.h. A dive is another test for violent disturbances and the ability to recover with the engines off and the air speed reaching 20 per cent. above maximum level flying speed, at which speed the machine must answer all controls correctly and effectively. The controls must then be released and the machine must of its own accord return to a steady gliding attitude without serious loss of height. It may be necessary to pass this test when trimmed for any speed from 80 to 110 m.p.h. Next the machine must be flown at full throttle at an air speed of 45 m.p.h. trimmed for any speed from 45 to 75 m.p.h. The engine is to be switched off and at the same moment one or two or all of the controls are to be moved in such a manner that an abnormal attitude results. Complete recovery is to be made with the aid of the controls and a steady glide to be taken up with a loss of height of not more than 250 ft. from the height at which the abnormal flight attitude was obtained. The test is to be repeated with the exception that when in an abnormal flight attitude all controls are to be released and a complete recovery made by the machine itself, taking up a steady gliding attitude with a loss of height of not more than 500 ft.

Controllability

Three substantially independent controls, corresponding to three axes mutually at right angles, are necessary, which must continue to be substantially independent and collectively effective in the same direction at any attitude of the machine from that at maximum level flying speed to that at the steepest glide and at any throttle opening of the engine or engines. It must be demonstrated that there is not a complete loss of control when any particular attitude is reached, such as that which follows in stalling.

There must be demonstrated the effectiveness of each and all controls at any speed and at any attitude from that of maximum level flying speed to that at the steepest glide and at any throttle opening, the tests being definite and sharp movements of any controls resulting in corresponding definite rotations about the respective axes. Controls must not only be effective in producing disturbances of attitude but also in enabling rapid and definite recovery to be made from disturbances. The effectiveness of any one control or combination of two controls when the other control or controls are left free or held in a fixed position must be shown, and possibly in gusty weather as with the other tests.

Manœuvring in Restricted Area and on the Ground

A square plot, 500 ft. by 500 ft., will be marked off and considered as surrounded by an obstruction 25 ft. high along its entire boundary. The take-off shall be in any manner and a climb made either above the square plot or outside it, providing the machine passes above the imaginary boundary obstruction. The engine may be switched off at any time and the pilot must land within the square plot without passing through the imaginary boundary obstruction. For the ground test a demonstration is required of taxi-ing under own power without any external assistance in any direction in a wind whose mean speed at ground level is at least 20 m.p.h. Easy handling on the ground is another necessity.

How Points are Gained

In the speed tests two points will be awarded for every mile per hour less than 35 m.p.h. at which level controlled flight can be maintained—the maximum number of points obtainable being ten; four points for every mile per hour less than 38 m.p.h. which is not exceeded in a steady controlled glide during a period of 3 minutes—maximum points being 24. Any machine which obtains a combined total of at least 24 points under these tests will be eligible to receive points for high speed in excess of 110 m.p.h. as follows: one point for every 2 m.p.h. in excess of 110 m.p.h. at which level flight can be maintained; maximum points being 10.

In the landing tests there will be two points for every 3 ft. less than 100 ft. in coming to rest after first touching ground—maximum points being 40. For landing in a confined space there will be one point for every 2 ft. less than 300 ft. from the

base of an obstruction 35 ft. high in coming to rest after gliding in over the obstruction—maximum points being 75. In the take-off test there will be one point for every 15 ft. less than 300 ft. required to take off from standing start—maximum points being 15; and one point for every 10 ft. less than 500 ft. to clear obstruction 35 ft. high from a standing start—maximum points being 26. The number of points obtainable then amount to 200. This concludes the test and awards.

Conditions

There are naturally certain conditions to be observed by competitors when submitting their machines to the official tests in New York, all of which do not require detailing as some will be quite understood. It is just a matter of necessary procedure for the harmony of the competition. One or two interesting points, however, are that aviation fuel of standard quality will be supplied free of charge, but another fuel may be used provided it was used in the official trials of the engine employed. Also, it may be necessary to demonstrate a machine by the competitor's own pilot prior to tests made by the Fund, otherwise all tests will be made by the Fund's pilots, although instructions may be given to these pilots if required by the competitors. Transport and mechanics must be supplied by the competitors and maintained at their expense. Three fair attempts will be allowed for passing any test and alterations to machines may be approved, but it may entail requalification in any or all of the tests. The same design of propeller must be used throughout. Propeller blade settings must be the same except that a pitch-varying mechanism may be used if it can be operated from the pilot's cockpit during flight. An interesting point to remember is that in the case of a machine which departs radically from conventional practice in securing flight the requirements of the competition that are consequently impossible of attainment may be substituted by other tests which will satisfy the object of the competition.

Prizes

The winner of the competition will receive \$100,000, which will include the safety prize if previously received; and five others will receive \$10,000 each in the order of the presentation of their machines for the tests and which have satisfied the safety tests detailed above under that heading. The Fund will consider applications for special grants to assist in the cost of transporting duly accepted entries to the testing field near New York City on the basis of \$1 per mile in excess of 1,000 miles up to a maximum of \$2,000 for any contestant. The award of prizes will not entail the abandonment of any proprietary rights on the part of the contestant, but the Fund shall have the right to disseminate complete information pertaining to the machines in any it sees fit. Heavier-than-air designs from any country are eligible.

The Royal Air Force Display

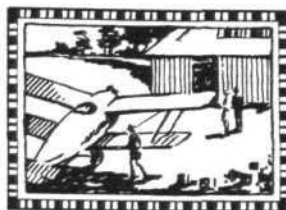
A THRILLING "Set Piece" has been arranged for the Royal Air Force Display at Hendon on July 2. This will take the form of another of those Eastern dramas in which the R.A.F. have proved so efficient. Briefly, the story goes thus: a small community of European missionaries and traders are established in an Eastern town—which, by the way, is being built on the 'drome mainly out of scrap aircraft—when a wave of unrest sweeps over the country. Trouble then breaks out in the town and the Europeans are isolated in an old mud fort. Patrolling R.A.F. aircraft observe their signal of distress, whereupon the pilot calls for assistance by radio-telephony (this will be broadcast on the ground by loud speakers). Meanwhile the Europeans manage to escape, under heavy hostile fire, into open country, and then No. 12 Squadron, with Fairey "Fox" day bombers arrive and attack the town with bombs, and engage the natives with machine-gun fire. After several such attacks the town is destroyed by fire, whilst aeroplanes from the two London Auxiliary Air Force Defence Squadrons arrive (from London?) and drop food, water and ammunition by parachute to the Europeans. Shortly afterwards a relief force arrives in two Vickers "Victoria" troop-carriers, and while this force attacks the enemy on the ground, the women and children emplane and the "Victorias" fly away with them to safety. This event, it may be mentioned, will be broadcast by the B.B.C., as well as two other events—the destruction of a Kite Balloon and the air battle for London, in which 30 aircraft will take part. Air Marshal Sir John Salmond, A.O.C.-in-Chief, Air Defences of Great Britain, will also deliver a broadcast address about the Display from Savoy Hill on Saturday evening, June 18.

The Royal Aero Club has been allotted a reserved space in the 10s. enclosure at Hendon, and tickets of admission to the display for the 10s. and 5s. enclosure may also be obtained from the Royal Aero Club. The Club will serve a limited number of luncheons and teas in the enclosure and members are requested to notify the Club if they wish to avail themselves of these facilities.

The Aldershot Tattoo

THEIR Majesties the King and Queen hope to be present at the final performance of the Aldershot Command Searchlight Tattoo, which is being held at Rushmoor, on June 18. In this year's Tattoo, as on previous occasions, a grand historic military spectacle is presented as the principal item. This time it is the famous Battle of Blenheim, when in 1704 the Duke of Marlborough, by his victory over Marshal Tallard's army, saved Europe from the dominion of Louis XIV. It is a thrilling spectacle, being both realistic and exact in every detail—thanks to the supervision of Capt. H. Oakes-Jones, who is, perhaps, the greatest living authority on military history. The drill, uniforms, and equipment of both armies are presented exactly as they were in 1704—in fact, a cannon of that period, lent by the present Duke of Marlborough, are used in the attack. By way of a contrast, this event is followed immediately by a lightning presentation of a modern battle, with its tanks, aircraft, motor artillery, infantry motor transport, etc. On the musical side, the massed bands again give the ever-popular Tchaikowsky's "1812," while over 100 horsemen take part in a mammoth musical ride. Perhaps the most impressive and picturesque item is the display by massed Pipers.

PRIVATE



FLYING

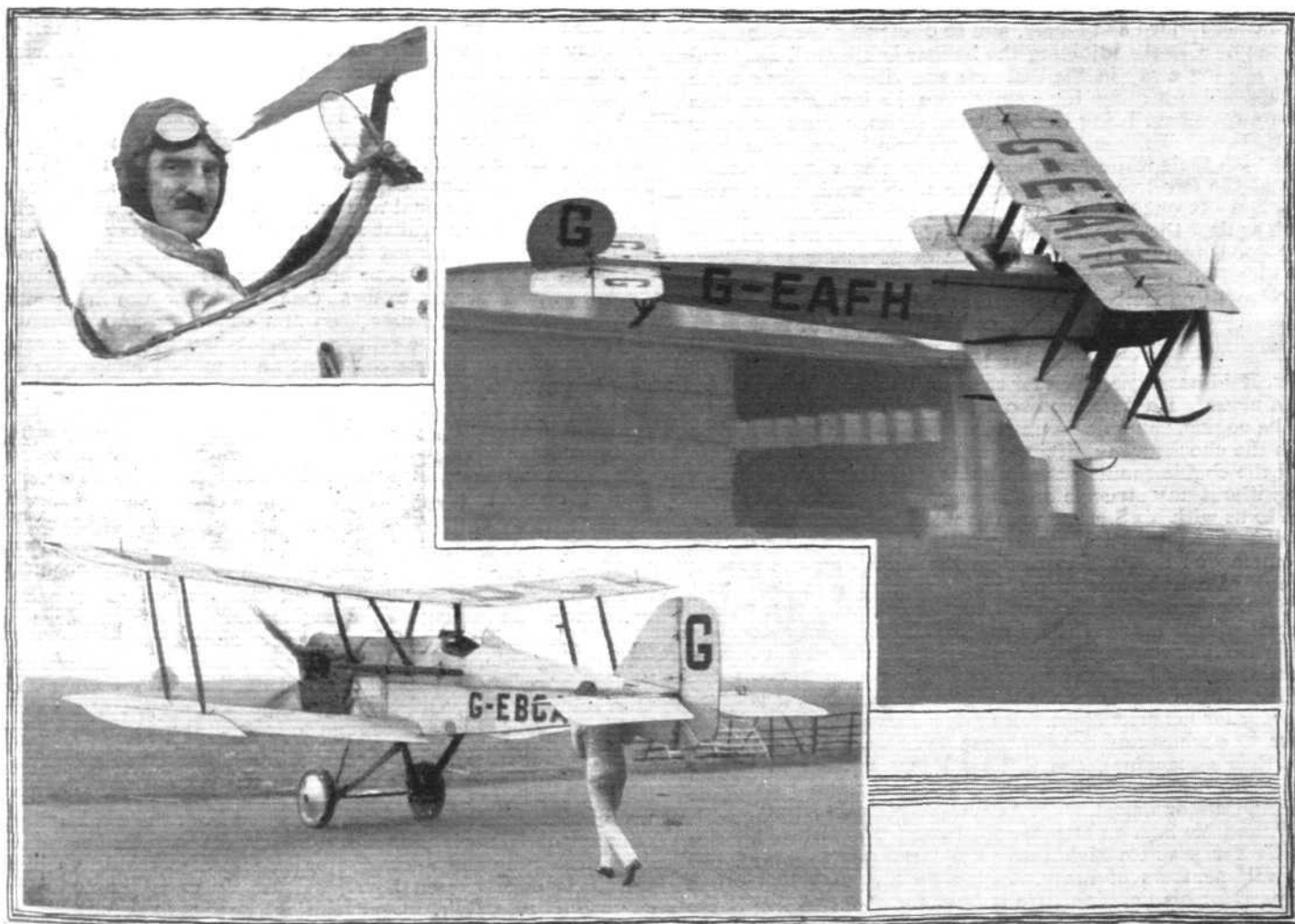
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DR. WHITEHEAD REID

The First Post-War Private Owner

It is the misfortune of us all at times to be the victim of our own innocence, and therefore we agree with the opinion of Dr. Whitehead Reid that the success of private flying as practised by a private owner depends upon the possession of a first-class mechanic. It is often safer to fly on the responsibility of someone else than on the responsibility of yourself, although it is against all human nature to admit it, even in face of experience. Most of us, for instance, have the illusion that we should be safer in the air if piloting ourselves rather than being piloted by others. It is through the natural conviction that we should take care of our own necks more than others would for us. Dr. Whitehead Reid expresses his opinion after experience, which is what all of us do not always do. In the course of six and a-half years' private flying he has never had one forced landing through engine trouble. Incidentally, we are sorry to think that our recent visit to him at Canterbury was possibly the cause of this fine record being broken. That is, if his descent in his S.E.5A immediately after leaving the ground through the

90 h.p. Renault starving can come under the category of a forced landing, as it was generally defined. It was understood that his flight was in the nature of a test flight, and it was not expected that he would get off with a good engine, for he had recently had some rather vague trouble with this engine, which had not been removed by the usual minor adjustments and replacements. We therefore think that his record is not broken. Although the S.E. had to be tested some time, Dr. Reid was none the less making the flight at the moment for our convenience—which was very kind of him. Despite the validity of his opinion, however, it would not, perhaps, be quite right to assume that unless a private owner can afford to keep a mechanic he cannot hope to fly successfully. We would at least hope that this is not the case, for it would not do private flying any good. Apart from the question of safety, which Dr. Reid is not thinking of when he expressed his opinion, the additional expense is just what private flying does not require at this stage, or at any stage come to that, for more expense is never an advantage



[“FLIGHT” Photographs]

BRITAIN'S FIRST POST-WAR PRIVATE OWNER: Dr. Whitehead Reid, of Canterbury, registered both his machines as long ago as 1922—the Avro-Renault on March 31, and the S.E. 5 on October 20. As he was, and still is, totally unconnected with the aircraft industry, he can justly claim to be our first private owner. The upper photograph shows Dr. Whitehead Reid flying his Avro. Note the commodious hangar in which he keeps his machines. The lower photograph shows the method employed for taxiing the S.E.5 out “under its own power.” Inset, Dr. Whitehead Reid in the cockpit of his S.E.5.

to anything. Obviously Dr. Reid's experience of six and a half years' success speaks for itself from a flying point of view, but not, perhaps, from an economical point of view. We know that trouble with aircraft and aero engines is a costly affair, but in the case of engine trouble, which is, after all, the only running trouble that is usually to be met with unless bad landings are a pilot's natural habit, a mechanic can only be an economical proposition when there has been more engine trouble than engine reliability.

The Safety Aspect

Of course, the safety aspect does come into the question. Considering what reliance has to be placed on an aero engine, and the limited experience, generally speaking, of private owners at this stage in private flying, we would agree that if the expense can possibly be borne it should be. It certainly might help one to live longer, if that is a point worth considering. A good pilot is not necessarily a good mechanic. To be so may be an ideal combination, but none of us live up to ideals. We prefer to risk things. Besides, to some natures, it is not always compatible. Many owners will have a machine for the sole purpose of flying, and have no inclination for hours of work spent on aero engines. They prefer to pursue knowledge in theory rather than in practice. One is not essentially mechanically minded because of a wish to fly. Dr. Reid is very fortunate in the possession of an excellent mechanic who is all the more remarkable in that his education on aero engines has been through the process of experiment (apparently on his master), and with continual success. He has taken to it instinctively, and such natures are usually more or less infallible. When Dr. Reid finds himself near R.A.F. people, they inevitably admire the fine condition of his engines and praise his mechanic. Dr. Reid is very lucky, too, in having a whole aerodrome for his sole use just outside Canterbury, where he practises his profession, situated in pleasant surroundings. It was once occupied by Squadron 50, and it consists of a fine hangar with a concrete floor and sliding doors. It is in good condition, and against its vast interior his fleet of two machines look rather forlorn and lonely, and so obviously needing other company. Closely adjoining the hangar is his field, long and wide, sloping away in the distance and rising gently on the far side. The surrounding country is quite ideal for landings in an emergency, being mostly fields without trees or other obstructions. In one corner of the view are some hop oasts with their white revolving tops showing very distinctly against the few trees in that direction. There is apparently a section cut out of the semi-cone shape tops which shows black against the prevailing white, and the casts are therefore very good symbols in the hop area of Kent for indicating the direction of the wind. Dr. Reid pointed this out as a tip worth remembering by private owners or others flying in Kent. Oasts are kilns for the drying of hops or malt.

Some Good Ideas

Dr. Reid has a good idea for the easy handling of a machine when alone. He puts the chocks beneath the wheels, starts up the engine, shuts down until it is gently ticking over, then pulls the chocks away, lifts the tail bodily, and he finds that with the engine running the machine practically wheels itself out without any struggle on his part. He demonstrated the idea to us with his S.E.5a, and it obviously commended itself. Another good practice of his which an experienced friend recommended is never to run up the engine on the ground except, of course, after considerable repairs have been done or overhauls made extending over some time. But in the normal course he runs it up moderately before ascent, and flies with just sufficient power. He only opens full out in the air on each flight for about one minute just before landing, and if the engine responds well he knows that it is quite in order for his next flight. Running up on the ground does harm to engines and does not put years on them. Both of Dr. Reid's machines, the S.E.5a, E.B.C.A., and his Avro, E.A.F.H., are fitted with 90 h.p. Renault engines, which he finds quite economical. His Avro was registered on March 31, 1922, and his S.E. on October 20, 1922. The former he uses mostly for practice flights and the latter for journeys, but like all members of his profession he has very little time to spare for his hobbies. He is busy for about twelve hours a day, and it is only on Sunday mornings that he gets a practice flight. It is almost impossible for him to make anything like a tour as many of the private owners are now beginning to do. He tries to make a practice of going up once a week, otherwise he thinks one would easily get a little stale. His mechanic explains that the doctor cannot get down for ten days sometimes, so that the S.E. has to wait a long while before it is tested after recent minor troubles, for when he

does arrive his time is short and the Avro is always ready for the air, so the S.E. gets neglected. It is fortunate for Dr. Reid that he has such an excellent mechanic, and an aerodrome in his district, for there is no flying club in Kent yet despite many efforts at Lympe and Tunbridge Wells to form one. His aerodrome is comparatively near Hawkinge, and the R.A.F. there give him every possible help in the occasion demands.

A Story

The way in which he obtained his S.E.5a involves a very interesting story which time, perhaps, has made possible to tell without doing any harm to anyone. Dr. Reid was very anxious to buy a machine from the huge stock of aeroplanes which became surplus after the war, but owing to the official policy at the time he found it impossible to do so despite pulling every string at his hand. However, there was someone who got a job in one of the factories where a wholesale destruction of surplus war stock was being carried out and the material sold by auction to the public. One day he was given five complete S.E.5a machines to smash, but instead of going to work with a hatchet he used a spanner. Apparently he was an artist, and in quite a short time he had those five S.E.'s piled up in one big heap, looking like a valuable heap of firewood to the uninitiated. When the time came for this heap to be sold by auction for its subsequent real destruction he appeared amongst the crowd of buyers round the auctioneer with a clean collar on and an air of respectability which gave him the appearance of being wealthy. Innocently, he joined in the bidding for the heap of firewood and bought the lot for £5! Five complete S.E.5a's for £5! One pound each! He carted them away, went to work again with a spanner and reproduced five healthy-looking aeroplanes, ready for sale. Dr. Reid, who, of course, had nothing to do with the transaction, bought one for £30. Two others went sky-writing. Altogether it was one of those exceptional bargains where all interested parties felt elated with their share. His Avro he purchased from Captain Sparks, now an instructor of the London Aeroplane Club, but then of the Berkshire Aviation Company, and it is probably one of those machines in which Captain Sparks has carried some of his 60,000 passengers.

Learning to Fly

As a private flier Dr. Reid is perhaps unique for the manner in which he learned to fly. He never passed through a thorough continuous course under one instructor. His training was most casual and carried out under a variety of instructors. It was whilst serving in Egypt during the war as an M.O. that he used to persuade any instructor who happened to be idle to take him up for a lesson, and in this chance way he learned to fly. One who knew him in Egypt said that they could never keep him on the ground, so that apparently it was no use going to the sick-bay if the doctor was required. When he felt confident he launched himself on a D.H.6, which was the first machine he possessed. Despite his haphazard training, however, he is a very fine pilot, and a most considerate pilot when he is carrying passengers. He brings a fine courtesy to his flying. He never takes up a passenger without first going solo, and the writer observed that he gives up his rear cockpit to his passenger and changes to the front cockpit. During our recent visit to him when he received us with every hospitality and kindness he motored us to his aerodrome and was good enough to have his machines brought out and fly them. Taking the S.E.5a first, we have mentioned that owing to the engine starving he taxied back after a short glide; then the Avro was run up and he took off well, flying solo, and did some very fine low flying over a limited area, approaching lower with full throttle each time, then zooming away and turning on the climb.

After this he was kind enough to take the writer for a flight over Canterbury. A fine haze hung low over Kent that day, which was thicker higher up, so that visibility was nil above 500 ft., but from that altitude a fine clear view of Canterbury was obtained. It is a very pretty town from the air, being a mingling of red roofs amidst batches of trees with the beautiful cathedral, grey and ancient, the predominant feature in the view. It can be seen how ideal for flying is the country surrounding Dr. Reid's aerodrome. The high dark red shed is very easily found. The weather shortened the flight, although it was full of incident whilst it lasted. Dr. Reid had no qualms in giving control to his passenger for a moment, although it did not result in a very intelligible display, being conspicuous for a porpoise movement in an effort to follow a railway line. On returning Dr. Reid followed out his practice of opening the engine full out for a minute, during which time the old Avro did about 75 m.p.h., then he did a couple of

split-air turns, which made the writer feel he wanted to ward off the pressure of the air on the fuselage, circled the field and landed. A most enjoyable trip.

Past History

In 1923 Dr. Reid entered his S.E.5a for the Grosvenor Challenge Cup and flew it himself in the race which started from Lympe, passed through Croydon, then Birmingham Bristol, Croydon and Lympe, a total distance of approximately 404 miles. He reached Birmingham and there he judged it impossible to get sufficient speed out of his machine and he retired, later flying back via Croydon. During the light 'plane competition at Lympe in 1924 he was a regular arrival in the mornings, one day on his S.E. and the next on his Avro, making a split-air bank, a few Immelmans, and concluding with some loops before landing. Very often he has turned his flying to the advantage of hospitals and other charities by carrying paying passengers. On that memorable Sunday in aviation history when London welcomed the Atlantic hero, Col. Lindbergh, he flew to Croydon somewhat intrepidly and, consequently, he is still wondering how he got down and got away safely.

A New Conrad Story

Dr. Whitehead Reid was a friend of Joseph Conrad, the

famous novelist, and is the lucky possessor of a set of his incomparable works all autographed. Conrad lived near Canterbury. He tells an interesting new story of the novelist when he was taken for his first flight, which was in a seaplane during the war. Conrad, of course, was not a young man then and his bearded and lined face gave him an even older appearance. This caused the pilot with whom he was going up and who could not have known who Conrad was to express some concern of the welfare of his passenger in a flight, to which the novelist, who retained the bluntness of his seaman days, replied: "Young man, if you had rounded Cape Horn in a sailing vessel in a storm you would know that flying isn't that," snapping his fingers. It was apparently characteristic of Conrad to compare the arduous experiences of life with rounding Cape Horn in a sailing vessel in a storm. His better known illustration, of course, is the comparison with writing a novel—an opposite instance where rounding Cape Horn comes out best, which is certainly as it should be.

One's final impression of the visit to Dr. Whitehead Reid and Canterbury was its ideal example of private flying and the conviction that it is the inevitable hobby of the favoured classes of the future. There could be no question that here was the new interest to which the active mind would turn as it turned to the motor-car yesterday.

LIGHT 'PLANE CLUBS

London Aeroplane Club, Stag Lane, Edgware. Sec., H. E. Perrin, 3, Clifford Street, London, W.1.
Bristol and Wessex Aeroplane Club, Yate, Gloucester. Sec., C. S. Clarke, Channel Road, Walton Park, Clevedon, Somerset.
Hampshire Aeroplane Club, Hamble, Southampton. Sec., Maj. Ross White, Hamble, Southampton.
Lancashire Aero Club, Woodford, Lancs. Sec., C. J. Wood, Oakfield, Dukinfield, near Manchester.
Midland Aero Club, Castle Bromwich, Birmingham. Sec., Maj. Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.

Newcastle-upon-Tyne Aero Club, Cramlington, Northumberland. Sec., A. H. Bell, c/o The Club.
Norfolk and Norwich Aero Club, Mousehold, Norwich. Sec., H. O. Bennett, 5, Opie Street, Norwich.
The Scottish Aero Club Movement, 101, St. Vincent Street, Glasgow. Sec., Harry W. Smith.
Suffolk Aeroplane Club, Ipswich.—Secretary, Courtney N. Prentice, "Hazeldele," Stowmarket, Suffolk.
Yorkshire Aeroplane Club, Sherburn-in-Elmet, Yorks. Sec., J. F. Barnes, 39, Swan Arcade, Bradford.

LONDON AEROPLANE CLUB

THE flying time for the week ending June 12, was 69 hrs. 15 mins.
 Pilot instructors:—Capt. F. G. M. Sparks, Capt. S. L. F. St. Barbe.
 Flying instruction:—Lady Bailey, B. G. Luff, A. J. Richardson, P. O. A. Davison, L. W. Gibbens, J. H. Veasey, L. Daniels, G. H. S. Mills, H. R. Pressland, Miss Spooner, P. W. Hoare, C. G. V. Mieses-gaes, E. J. B. King, H. M. Samuelson, L. C. Davey, J. R. de Havilland, W. Biheller, M. P. Susman, O. A. A. Pollard, G. Black, E. T. Symmons, R. Drysdale Smith, L. Rowson, Lord Carlow, R. C. Woodcock, F. C. Fisher, E. A. Lingard, H. J. Greenland, J. W. Whytlaw, Miss Fletcher, Dr. Cook, G. E. Clair, O. J. Marstrand, F. W. R. Martino, J. S. Boulton, A. H. M. Lees, R. Malcolm, A. Southgate, A. B. Ferguson.
 Solo flying:—Lady Bailey, J. J. Hofer, W. Hay, L. W. Gibbens, A. J. Mulder, R. Sanders Clark, Miss Spooner, R. M. S. Veal, E. T. Symmons, E. L. D. Moore, O. J. Tapper, Miss O'Brien, J. H. McClure, N. J. Hulbert, R. P. Cooper, Major K. M. Beaumont.
 Passenger flights:—Miss Wilson, Mrs. Woods Humphery, Mrs. Cook.
 Record for May:—The club established a record month's flying in May. The total hours being 235 hrs., 20 mins., made up as follows: dual instruction 246 flights, 110 hrs. 50 mins.; solo flying, 226 flights, 82 hrs. 5 mins.; passenger flying, 47 flights, 16 hrs. 30 mins.; test flights, 76 flights, 12 hrs. 40 mins.; race meetings, 13 hrs. 15 mins. 595 flights, 235 hrs. 20 mins.
 Royal Air Force Display.—Members wishing to obtain tickets for the Royal Air Force Display at Hendon Aerodrome on July 2, next are requested to apply to the Secretary, Royal Aero Club, 3, Clifford Street, London, W.1.

HAMPSHIRE AEROPLANE CLUB

REPORT for week ending June 5.—Total flying time for the week, 11 hrs. 10 mins.; instruction flying, 4 hrs. 45 mins.; solo flying, 3 hrs. 25 mins.; joy rides, 2 hrs. 10 mins.; test flights, 50 mins.
 Monday, our weekly holiday. Tuesday, slight engine trouble. Thursday afternoon and Friday, modifications to gudgeon pins.
 The following members had instruction:—Lieut. Mandeville, R.N., 30 mins.; Captain Molyneux, 30 mins.; Messrs. Jayne, 30 mins.; Brewster, 25 mins.; Hamilton Fletcher, 25 mins.; Cooper, 20 mins.; D. Rumble, 20 mins.; Count T. de Sibour, 20 mins.; Dr. Morrison, 20 mins.; Messrs. Cox, 35 mins.; Hunt, 10 mins.; Wall, 10 mins.; and Fortlage, 10 mins.
 The soloists were Hon. H. R. Grosvenor, 30 mins.; Keeping, 20 mins.; Brodie, 15 mins.; Deane, 10 mins.; and Captain F. T. Courtney, 2 hrs. 10 mins.
 The joy riders were Miss Renew, 20 mins.; Miss Scott, 20 mins.; Miss McNamee, 10 mins.; Mrs. Fortlage, 10 mins.; Mr. Vanden Bergh, 1 hr., and Mr. Crook, 10 mins.
 GE-BOH was brought to Hamble from Stag Lane on Friday evening by Captain Courtney, who proceeded to Bournemouth on Saturday in GE-BOI to represent this club at the Whitsun meeting.

LANCASHIRE AERO CLUB

REPORT for week ending June 11.—Total flying time, 40 hrs., made up as follows:—
 Dual with Mr. Brown: Harber, 2 hrs. 45 mins.; Linaker, 1 hr. 55 mins.; Torres, 1 hr. 45 mins.; Nelson, 1 hr. 40 mins.; Scholfield, 1 hr.; Davison, 1 hr. 20 mins.; Rowley, 1 hr. 15 mins.; Shiers, 55 mins.; Heys, 50 mins.; Riley, 35 mins.; Miss Baerlein, 40 mins.; Ruddy and Kinsley, 30 mins. each; Collinson, Debsom, Stonex and Hope, 25 mins. each; Musgrave and F. Scholes, 15 mins. each.
 Solo: Musgrave, 3 hrs.; Costa, 2 hrs. 20 mins.; Catterell, 1 hr. 40 mins.; Ward and Nelson, 1 hr. 15 mins. each; Leeming and Chapman, 55 mins. each; Abdalla, 50 mins.; Crosthwaite, 30 mins.; Goodfellow, Benson and Forshaw, 25 mins. each; Hardy, 35 mins.; Cantrill and Lacayo, 20 mins. each; Wade, 15 mins.
 Joy Rides: With Mr. Cantrill—Mrs. Scholfield, Miss Hughes, Andrews, Thomas, and Miller, Stubbs and Thorpe. With Mr. Lacayo—Hartley, Booth and F. Scholes. With Mr. Brown—Dyson and Walker.

Test Flights: 1 hr. 35 mins.

Messrs. Musgrave and Ward successfully accomplished their height test during the week. One may as well record any cheerful items first, for there is a gloomy tale to follow. At the moment of writing the club possesses one serviceable machine. MQ and OK, which are out of action for complete overhaul and under-carriage replacements respectively, will soon be back at work, but IR, the first "Moth" delivered to the club, has probably made her last flight. Mr. Lacayo, with Mr. F. Scholes as his passenger, was making a cross-country flight when a rocker arm broke. It appears that the pilot only discovered at the last moment that the field he had selected was bisected by iron railings. A desperate attempt to avoid them by turning resulted in a nasty mess, the machine finishing up on her back in a state of considerable disintegration, with the petrol tank more or less wrapped round the exhaust pipe, or vice-versa. When the machine had been removed from the occupants it was found that Mr. Scholes was suffering from a thick ear and Mr. Lacayo from an attack of gloom. For his comfort one may mention that iron railings are notoriously difficult to spot from the air and have been the undoing of many an experienced pilot before now. A bit of comic relief was added later on when our ground engineer, having tried every argument to disperse the crowd round the wreckage, added as a final exhortation:—"Do go home to your suppers; you've seen all that there is to see. She won't be flying again to-night."

MIDLAND AERO CLUB LIMITED

REPORT for week ending June 11:—The total flying time was 20 hrs. 44 mins.

The following members were given dual instruction by Mr. McDonough: R. Cazalet, V. de Satge, J. A. Edwards, G. Aldridge, R. L. Brinton, J. C. Rowlands, R. D. Bednell, J. W. Brewin.

Dual instruction by Mr. Glover: H. Beamish, G. V. Perry, C. Fellowes, W. Swann, R. L. Jackson, S. H. Smith.

Passenger flights: Capt. J. E. Brewin, V. de Satge. Test flights occupied 1 hr. 40 mins. Mr. Hubert Broad landed at the aerodrome on Saturday in the D.H. Moth "X."

We were reluctantly compelled to scratch our entry for the Newcastle pageant as E.B.L.T. became due for top overhaul during the week, and we therefore only had the one machine available for dual over the week-end.

The wedding took place on Tuesday of our chief instructor, Mr. W. J. McDonough. All will join in wishing him the very best of wishes for his future happiness.

Mr. A. M. Glover (Flying Officer, Royal Air Force Reserve) has been appointed Hon. Assistant Instructor, and will be on duty at the aerodrome during the week-ends.

The race for the Air League Cup will be held on July 16 in conjunction with the Birmingham air pageant, when two additional short races will be included.

YORKSHIRE AEROPLANE CLUB

REPORT for the week ending June 11:—Solo, 5 hrs. 20 mins.; dual instruction, 10 hrs. 50 mins.; tests, 1 hr.; joy rides, 2 hrs. 50 mins.; flying in connection with the Newcastle pageant, 5 hrs. 30 mins.; photography, 4 hrs. 50 mins.; total flying time, 30 hrs. 20 mins.

The following members took dual instruction with Mr. Beck: General Atcherley, Mr. R. Lax, Swift, Yeomans, Ambler, Winn, Tattersall, Thompson, Brackenbury, Bailey, Capt. Milburn, Hylton, B. Dawson.

The following members flew solo: D. Atcherley, R. Atcherley, Wilson, R. Lax, Clapham, Birch, M. Lax, Wayman, Thompson, Mann.

All the world has been trundling north to Newcastle during the latter part of the week, and most of it has passed through this aerodrome.

A week of hectic ground engineering on the part of our dam good staff, which resulted in G-EBNN carrying off the booby prize in the three races for which we entered. Better to be safe than sorry.

We had looked forward to meeting Hampshire at Newcastle, and were disappointed.



Pinedo's Progress

THE Marquis de Pinedo arrived at Lisbon on the afternoon of June 10 from the Azores. He was sighted at 4.30, and after first flying over Lisbon alighted at 4.50 and came ashore at 5.20. Representatives of the President of the Republic, and the Minister for Foreign Affairs, the Italian Minister, Admiral Gallis, the Director of Naval Aviation, and the Italian Consul at Lisbon received him. A number of airmen and the greater part of the Italian colony in Lisbon gave the Marquis a great ovation, and champagne was handed round in his honour. Several gifts were made too. Accompanied by the Italian Minister he subsequently went to call on the President, and then on the Foreign Minister. The Savoia flying boat covered the distance from Ponta Delgada to Lisbon, about 870 miles, in nine hours. Owing to the choppy sea, Portuguese seaplanes were unable to go out to meet him. His flight was without incident, the weather being fine, and the machine was in good order after its seven days in tow, when the Marquis came down off the Azores in the previous stage from Newfoundland. He commenced this last stage across the Atlantic from Horta, Azores, at 6.30 a.m. on June 10, and first flew to the position where he made his forced descent, then returned, passing over Horta again at 12.30 p.m., and arriving at St. Michael's at 2 p.m. The following day he left for Portugal. On June 13 he left Lisbon for Barcelona at 6.30 a.m., after dropping flowers over the spot where Lieut. Espanca, the Portuguese pilot, was killed on June 6, and he arrived there the same day.

F./O. Cocks Still Missing

THE latest news received by the British Embassy at Constantinople from the Embassy official now at Konia concerning the disappearance of Flying-Officer Cocks and L.Ac. Rowston on their flight from India to England, purely as a private adventure, is that Turkish aviators advised them against leaving, as the weather was bad and their compass defective. Nevertheless the propeller was changed at Konia, and they decided to follow the railway line, and were seen flying by people at Kadin Han, a small town thirty miles to the north-west of Konia. That district is now being searched. A Turkish air squadron left Constantinople on June 13 to search Thrace.

The Search for Nungesser and Coli

STILL the search for Nungesser and Coli continues in Newfoundland. One expedition has so far been unsuccessful, while Major Sydney Cotton's expedition is waiting at Halifax, Nova Scotia, for good flying weather to make an attempt.

The First R.A.F. London-India Attempt

THE Air Ministry announces that at present it is not possible to state the cause of the stoppage of the engine resulting in the forced landing in the Persian Gulf. Investigation is still proceeding. It may be that the definite cause will never be known owing to the damage caused by the machine hitting the water, and the fact that several parts were lost during salvage operations. At present it is thought that the trouble was probably nothing more serious than a temporary stoppage of the petrol supply, due possibly to an air lock.

The French Non-Stop India Flight Attempt

COINCIDING with the second British attempt on the long distance record and bringing something of a spirit of rivalry to the attempt is the flight of Pelletier d'Oisy and Gonin from Paris to Karachi. They set out from Le Bourget on June 14 in their S.E.C.M. machine fitted with a 600 h.p. Lorraine engine, but had to make a forced landing after flying two miles. The machine crashed and caught fire, but d'Oisy and Gonin managed to jump clear without serious injury.

Rohrbach-Roland No. 3 Makes New Records

ON May 29 and 30, 1927, the third machine of the air liner type "Rohrbach-Roland" fitted with 3 B.M.W. engines, established three new world records at the Staaken aerodrome, being piloted by the well-known German pilot, Hermann Steindorff. It took off for the first flight in 12 secs., carrying a useful load of 2,000 kg. over a distance of 100 km. (Belitz-Marwitz), and the speed attained was 198 km./h. A second flight was made under the same conditions and a speed of 199.5 km./h. was attained. The next day a triangular

course of 500 km., Rühnick-Wittenberg-Nikolassee was chosen for a flight with the same useful load of 2,000 kg., and a speed of 199 km./h. was made. This performance also broke the record for the same distance with a useful load of 1,000 kg. Thus the new records are now as follows:—Useful load of 2,000 kg. (speed over 100 km.), 199.5 km./h. Useful load of 2,000 kg. (speed over 500 km.), 199 km./h. Useful load of 1,000 kg. (speed over 500 km.), 199.0 km./h. Having been confirmed by the official witnesses of the Deutscher Aero Club these figures were handed to the Fédération Aéronautique Internationale for verification as official world records.

Coste and Rignot Flying Home

THE two French aviators Coste and Rignot, who were forced down in the Ural Mountains in their attempt to beat the non-stop long distance record, are flying home and they left Moscow for Paris at 3.45 a.m. on June 12.

Lisbon-Seville Air Service

AN air line between Lisbon, Madrid and Seville was opened on June 10, and there will be three flights weekly.

An Air Day for Bristol

THE Bristol and Wessex Aeroplane Club have arranged an Air Day for June 22. The arrangements are to commence at Filton Aerodrome at 2.30 p.m., with a display and fly-past of the various machines present. There will be two handicap races open to all comers and a utility race for light aeroplanes. The Air Ministry are sending a flight of three machines for exhibition purposes, while one of the Bristol Aeroplane Company's pilots will do crazy flying. Any new members who enrol with the Bristol Club during the afternoon will be given a free flight. Sir Sefton Brancker is to be officially welcomed at the aerodrome by the Lord Mayor, whilst during the afternoon Talbot O'Farrell, Irish "light weight" Entertainer at the Bristol Hippodrome for that week is going to have a joy ride. In the evening Sir Sefton Brancker is holding a public meeting at the Victoria Room, Bristol, at 8.30 p.m., personally supported by the Lord Mayor and Col. Woodcock, J.P. Visitors by air will be especially welcomed by the Bristol Club, who deserve every encouragement for the keen way in which they are booming flying in the West.

Spanish Aviation Progress

SPANISH aviation progress was displayed at a review at Getafe Aerodrome, near Madrid, on the afternoon of June 9 when 120 machines of various types were shown, all of which had been built or assembled in Spain during the last year. The King inspected the machines, and the Patriarch of the Indies blessed the 14 new squadrons formed with these machines. The strength of the Army aeroplanes is about 450, but according to the proposals in hand this number will ultimately reach 1,400. De Havilland, Breguet, Fokker and Dornier-Wal aircraft are constructed or assembled under licence at half-a-dozen workshops, and Spanish constructors are beginning to produce designs of their own. The Government is building one type, the A.M.E., at the military works at Cuatro Vientos. This type is fitted with Hispano-Suiza engines. A Catalan, Captain Barada, has designed an aeroplane fitted with four machine-guns, all of which can be fired by the pilot. An engine said to give considerable power for low weight and size, has also been designed by him and is being tested. A feature of the ceremony at Getafe was that each of the new squadrons had a god-mother, and among them were the King's two daughters, the Infanta Beatrice of Bourbon-Orleans, and the Marquis de Estella's two daughters.

Air Seasons in Australia

REGULAR aerial travellers are becoming so numerous on the Aerial Services operating between Melbourne, Riverina, Adelaide, Broken Hill and Cootamundra, that Australian Aerial Services, Ltd., are now issuing an "All Lines Season Ticket." The ticket comprises a number of flight coupons varying in value from £5 to 2s. 6d., which are valid for a period of 12 months over any of the above air services operated by this company. The tickets are being sold for £40 each, and may be issued in the name of a family or a firm, in which case a number of persons who are *bona fide* members of the family or firm concerned may use the ticket without extra charge. This progressive company has the distinction of being the first aerial service in the world to issue season flight tickets.

BERLIN GREETS CHAMBERLIN AND LEVINE

WHEN Mr. Clarence Chamberlin and Mr. Charles Levine, who, as reported last week, flew from New York to within 100 miles of Berlin, eventually arrived in that city, they were accorded a reception that was both impressive and enthusiastic—and, judging from reports, far more orderly than the wild receptions Col. Lindbergh experienced at Le Bourget and Croydon.

Before describing the scenes in Berlin, however, we would like to quote some extracts from a very interesting account of this Atlantic flight which appeared in *The Times* for June 9. Having overcome the difficulty of getting their heavily-laden Bellanca monoplane (Wright "Whirlwind") off the ground in safety, it appears that their troubles commenced soon after leaving New York. They found that the earth induction compass was running wild, and had to fall back on an old magnetic compass, which managed to put them off their course considerably, so that they had great difficulty in making Cape Race.

Rather than turn back and face the criticisms and jeers on their return, they decided to proceed and risk it, so set out for the open Atlantic. With little or no idea as to their bearings, they flew eastward, dodging the fog of the Grand Banks, sighting icebergs—which looked grand in the moonlight—and exchanging signals with an unknown ship. Then, when they were wondering whether they were going to hit Ireland, England, France, or Spain, they came upon the *Mauretania*, and flying low they circled to within 50–100 ft. round her. After this, they consulted a copy of the *New York Times* they had with them, and from the shipping news worked out the *Mauretania's* position, and found that they were somewhere near Ireland or England!

Some time later they sighted land—Levine saying it *must* be Ireland, because he was born on March 17 (St. Patrick's Day)—and thought their troubles were over. This was not the case, however, for on their entry into Europe they encountered rough weather, and during the night of June 5 were forced to fly at an altitude of 20,000 ft.

Last week we told how they were forced to come down, owing to lack of petrol, at Helfda, and again at Kottbus. At Kottbus the airmen spent a busy two days receiving congratulations, signing autographs, looking over their machine, and obtaining much-needed sleep. Before leaving

for Berlin on June 7 they attended a Civic Reception at the Town Hall, where they were presented with the Freedom of the town, and with a large silver bowl each.

There were enormous crowds at the Tempelhofer aerodrome, and in the streets leading thereto, waiting to greet the American airmen. At about 5.30 p.m. the advance guard of the escorting aeroplanes arrived, and shortly after a formation of 16 machines came into view, the white and yellow "Titanine"-doped Bellanca monoplane being easily distinguished in their midst. After circling over Berlin they landed at the aerodrome, Chamberlin and Levine being welcomed by Herr Curtius (Minister of Economic Affairs), Herr Böss (Burgermaster of Berlin), Herr von Schubert (Under-Secretary of the Foreign Office), and the American Ambassador.

After speeches all round, more autograph signing, and much cheering, the airmen were carried through the crowd to a motor car, in which they were driven slowly along the enclosures, thence to the American Embassy, where they attended a dinner party which lasted until the small hours of the morning. On June 8 they were escorted by the American Ambassador to the Presidential Palace, where they were received by President von Hindenburg, and in the evening they had tea with Chancellor Herr Marx prior to attending a banquet at the American Embassy.

On June 9 both Mr. Chamberlin and Mr. Levine were entertained at luncheon by Herr Stresemann, the Foreign Minister, and to dinner by Herr Koch, Minister of Communications. Continuing their "revels" the next day, they attended a reception in the City Hall, where Herr Böss presented them with plaques of honour, stating that the road leading to the Tempelhofer aerodrome would be named "Columbia Strasse."

It was originally intended that the American airmen would leave Berlin on June 12 for Vienna, but as the engine of their Bellanca monoplane required a thorough overhauling their departure was postponed, probably until Sunday next. From Vienna they will perhaps pay a visit to Prague, and later will come to London. Mrs. Chamberlin and Mrs. Levine both sailed from New York on June 7 in order to join their husbands in Europe.

COLONEL LINDBERGH'S RETURN

"He has returned unspoilt," said President Coolidge on the return of the Atlantic hero to Washington on Saturday, June 11. We on this side who met Col. Lindbergh can realise the truth of the American President's remark. It was illustrated over there when Lindbergh landed dressed in an ordinary plain blue-serge suit, although his military uniform was delivered to him at sea by air. Most naturally his mother, who has won a fame for her modest bearing almost equal to that of her son's, was the first to greet him. The crush was so great that the welcome ceremony, as officially planned, was delayed for half-an-hour. The guard of Marines excitedly pointed their guns at the crowd, and even snapped their triggers in an effort to alarm them and so clear the way. As he passed through the cheering crowd Lindbergh alternately waved his hand and talked earnestly to his mother, and when he reached the open-air stand where the President and members of the Cabinet had waited half-an-hour in the broiling sun, the hero seemed completely fatigued.

Lindbergh stepped ashore from the cruiser *Memphis* shortly before noon on Saturday, and at one o'clock he and his mother, who had gone aboard to greet him, drove in a car to the grounds of the Washington Monument, where the President conferred on him the first American Distinguished Flying Cross ever struck. After Mr. Coolidge had finished his speech, Lindbergh took a minute to pull himself together and address 35,000,000 radio listeners. He said, "The people of France and the people of Europe requested that I should go back to the people of America with one message. It was: 'You have seen the affection of the people of France and the people of Europe for the people of America demonstrated to you. Upon your return take back with you this message to the United States.' I thank you." After the speeches the triumphal procession passed the Quaker school where he and Roosevelt's children were educated. Immediately on his return, Col. Lindbergh received an offer to take charge of all flying activities for the American Society for the Promotion of Aviation at a salary of £20,000 a year. So far he has made no decision.

On Monday New York welcomed him. The Mayor, Mr. Walker, issued a proclamation that the day was to be given up

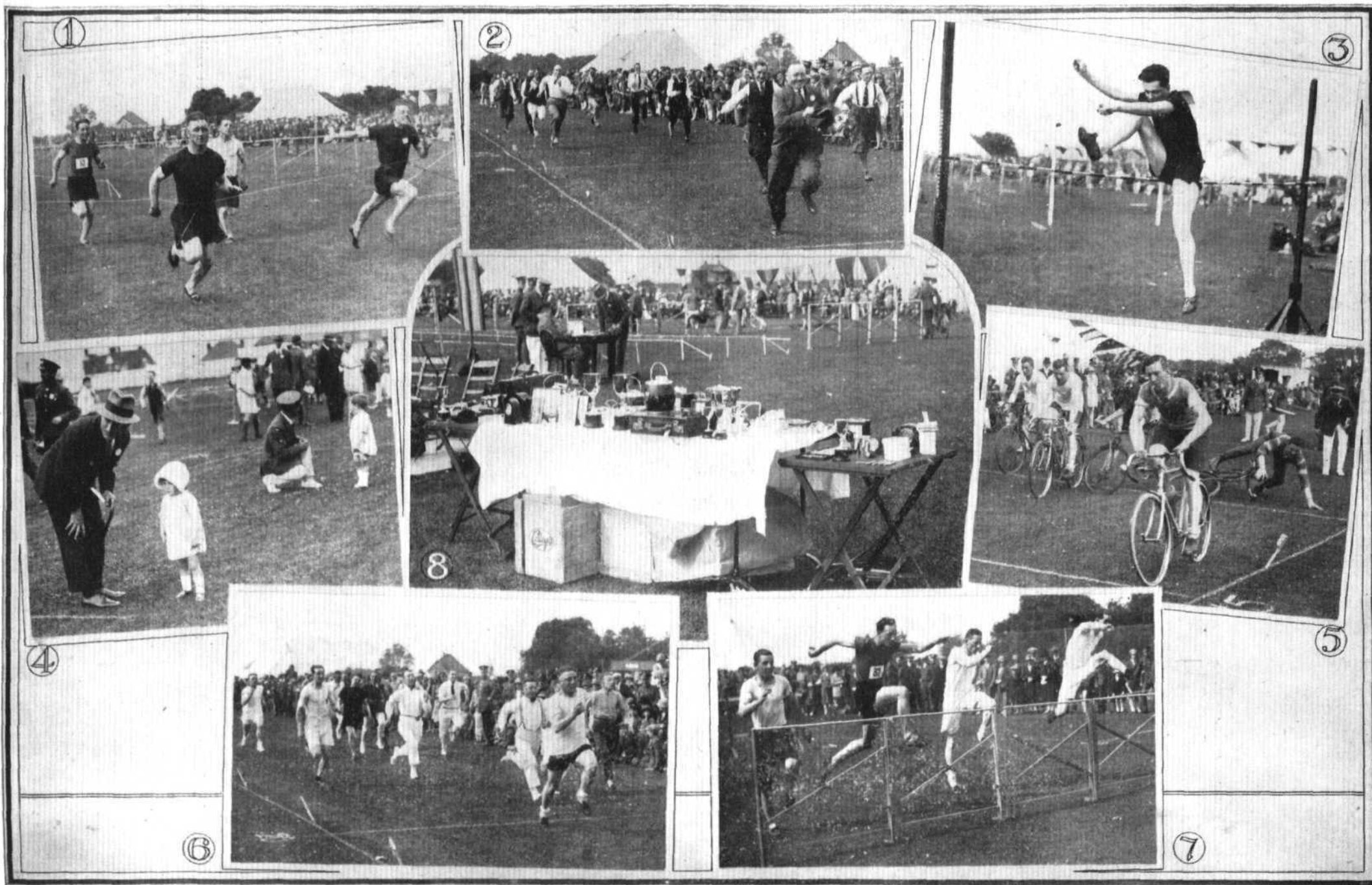
to public celebration. The Stock Exchange decided by vote to remain closed both as an honour to the hero and as a precautionary measure.

The National Geographical Society has voted Col. Lindbergh the Hubbard Medal, the highest honour that can be bestowed in the United States upon the explorer. There have been only seven other recipients of the medal, including Rear-Admiral Peary, Captain Amundsen, Sir Ernest Shackleton, and Commander Byrd. The proposal to raise a trust fund, the income of which would be at the disposal of Col. Lindbergh and his mother during their lives, was made to the Secretary of War, who asked the pilot by wireless to indicate his wishes. He expressed his gratitude and declined the gift.

Col. Lindbergh's appreciation of the welcome he received while in London is indicated by the following letter, which was handed to Col. the Master of Sempill, Chairman of the Royal Aeronautical Society, by Col. Lindbergh, on the occasion of the luncheon at the American Embassy, on June 2. The letter reads as follows:—

"DEAR COLONEL THE MASTER OF SEMPILL,—I am writing to you as Chairman of the Royal Aeronautical Society in an endeavour to express my thanks for the overwhelming and generous reception I have received from the people interested in aeronautics in England. Through you and the governing Council of the Royal Aeronautical Society, I should like to take this opportunity of thanking not only the Society but those other bodies which together govern the field of British aeronautics: The Royal Aero Club; the Air League of the British Empire; and the Society of British Aircraft Constructors. All four bodies have shown such great interest in my flight, and given me personally such a welcome on the occasion of my all too brief stay in this country, that I feel convinced that the bond of aviation is binding Great Britain and America more closely together than ever before, and that it will strengthen with the years to come. The spontaneous sincerity of your welcome makes me hope that in the not very distant future I may be able to re-visit your country and renew the all too brief acquaintanceships.—Yours sincerely,

"CHARLES A. LINDBERGH."



R.A.F. ATHLETIC SPORTS AT FELIXSTOWE : 1, Finish of 100 yards Championship. 2, The officers' race. 3, L. A. C. Coakes winning high jump. 4, Wing-Comdr. Maycock gives instructions to the "limit man" in the children's race. 5, Two competitors "stall" while "taking off" in the bicycle race. 6, Finish of N.C.O.'s race. 7, Final of hurdles championship. 8, The prizes.

[" FLIGHT " Photographs]

THE R.A.F. SPORTS AT FELIXSTOWE

THE R.A.F. Marine Aircraft Experimental Establishment of Felixstowe, held their sports on the Town Cricket Ground at Felixstowe on June 8. It was their fourth annual athletic event and although the weather was at times threatening, it remained fine until the end of the last race when the table containing the handsome array of cups and prizes had to be hurriedly conveyed to cover. Admirable arrangements had been made and although two extra items were added to the long programme, it passed off without incident. It was well attended, the comfort of the visitors being well catered for, whilst the excellent band of the Establishment was relieved at times by the martial strains of pipes and drums. Good performances were put up in the running events, particularly the duels in the long-distance races between Blick and Bluck who once made a dead-heat—and never found more than a yard between them in each race. Bennetts too, accomplished something out of the ordinary in securing the open 100 yards and the championship 100 yards, although one race followed the other. The two extra races were an open 100 yards and an open 880 yards, which should have been competed for at Martlesham the previous week, but which had to be postponed owing to bad weather. In the 880, Tym, the mile champion of the county, won comfortably from Scott of Shotley and Knights (R.M.), whilst Hudson, another Martlesham runner, had no difficulty in beating Bennetts and Langham at the shorter distance. It was ultimately decided to abandon the tug-of-war as, owing to a misunderstanding with regard to the time of the event, two teams did not appear when the "pulls" were called on. At the conclusion the prizes were presented by Mrs. W. Cocks. The competition between the five "Flights" gave considerable zest to the meeting, and in the end, the Inter-Flight challenge cup was won by Flight No. 3, with 27½ points, Flight No. 2 being second with 13½ points, and Flight No. 1 third, half a point behind. The championship cup, awarded by the Officers' Mess, went to Bennetts, of No. 3 Flight, and the "best performance" cup, presented by Wing-Commander Maycock, to Carnell of No. 1 Flight. The officials for the occasion were:

Chief starter, Wing-Commander R. B. Maycock, O.B.E.; judges, Sqdn.-Leader Woodhouse, D.S.O., Flight-Lieut. Hunter, Flight-Lieut. D. V. Carnegie, A.F.C., and Flight-Sergt. Parry, A.F.M.; referee, Flight-Lieut. Wardle; starters, Sqdn.-Leader G. E. Liveck, D.F.C., and Sergt.-Major Thornicroft; timekeepers, Flight-Lieut. C. N. Comper and Flying Officer W. E. Dipple; record steward, Sergt. Holbourn; megaphone steward, Corpl. Megginson.

Results

One Mile Handicap.—1 Smith, 2 Durrell, 3 Pledger. Time, 5 mins. 11½ secs.
100 Yards Handicap.—1 Bennetts, 2 Sanders, 3 Coakes.
440 Yards Championship.—1 White, 2 Milton, 3 Wraight. Time, 58 secs.
One Mile (open).—1 Scayesbrook, 2 Hill, 3 P.-O. Abrams. Time, 5 mins. 14½ secs.
Long Jump Championship.—1 Flight-Lieut. Sawyer, 2 Sanders, 3 Carnell. Distance, 19 ft. 6 ins.
100 Yards (open).—1 Bennetts, 2 Hudson, 3 Langham. Time, 10½ secs.
100 Yards Championship.—1 Bennetts, 2 Sanders, 3 Carnell. Time, 11½ secs.
880 Yards Championship.—1 Blick, 2 Bluck, 3 P.-O. Chilton. Time, 2 min. 13½ secs.
One Mile Relay Championship, 220, 440, 880, and 220.—1 No. 3 Flight, 2 No. 2 Flight, 3 No. 1 Flight. Time, 4 mins. 18½ secs.
Officers' Race.—1 F.-O. Spearing, 2 Wing-Commander Maycock, 3 Flight-Lieut. Sawyer.
Tug-of-war.—No. 2 Flight beat No. 3 Flight.
120 Yards Hurdles Championship.—Heat 1: 1 Wraight, 2 Carnell. Heat 2: 1 Sawyer, 2 Sergt. Hunter. Final: 1 Carnell, 2 Hunter, 3 Wraight.
One Mile Relay Championship, four 400 yards.—1 No. 3 Flight, 2 No. 2 Flight, 3 No. 1 Flight.
Three-legged Race.—1 Corpl. Bracken and Holbrook, 2 Carnell and Smith, 3 Milton and Smith.
One Mile Championship.—1 Blick and Bluck, dead heat; 3 Scayesbrook.
220 Yards Championship.—1 Bennetts, 2 Milton, 3 Carnell. Time, 24½ secs.
Two Miles Cycle Race.—1 May, 2 Bearne, 3 Corpl. Bracken. Time, 6 mins. 48½ secs.
High Jump Championship.—1 Coakes, 2 Flight-Lieut. Sawyer, 3 Drake. Height, 5 ft. ½ in.
N.C.O.'s Race.—1 Flight-Sergt. Beighton, 2 Sergt. Hunter, 3 Flight-Sergt. Parry. Fifteen ran.
One Mile Team Race.—1 No. 3 Flight, 2 No. 5 Flight, 3 No. 1 Flight.
Ladies' Thread-the-needle Race.—1 Mrs. Fenner, 2 Mrs. Boyd, 3 Miss Thornicroft.
One Mile Walking Race.—1 Drake, 2 Milne, 3 Pledger.
Band Race.—1 Sergt. Nicholl, 2 Corpl. Hough, 3 Dean.
Martlesham, 100 Yards.—1 Hudson, 2 Bennetts, 3 Langham.
Martlesham, 880 Yards (open).—1 Tym, 2 Scott, 3 Knight.

THE ROYAL AIR FORCE

London Gazette, June 7, 1927

General Duties Branch

The follg. officers are granted permanent commissions in the ranks stated, with effect from June 1: Flight-Lieut. W. V. Hyde, Flying Officer A. Hesketh, D.F.C., Flying Officer R. V. M. Odibert, Flying Officer B. V. Reynolds, Flying Officer C. B. Wincott. The follg. Pilot Officers are promoted to rank of Flying Officer:—H. L. Patch (April 12); W. G. Campbell (April 12); A. W. A. Ricks (April 18).

Sqdr.-Ldr. H. I. Hanmer, D.F.C., is placed on half pay, Scale B (June 5 to Sept. 18, 1927, inclusive). The follg. officers are transferred to Reserve, Class A (June 5)—Flight-Lieut. J. G. Horne, Flight-Lieut. F. J. Powell, M.C., Flight-Lieut. S. Smith, D.C.M., is transferred to the Reserve, Class C (June 7):

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the R.A.F. are notified:—

General Duties Branch

Group Captain C. E. H. Rathborne, D.S.O., to R.A.F. Depot, Uxbridge, pending posting, 13.5.27.

Squadron Leaders E. D. Johnson, A.F.C., to No. 9 Sqdn., Manston, 10.6.27. C. E. H. James, M.C., to R.A.F. Depot, Uxbridge, 9.5.27.

Pilot Officer on probation D. Tayfor resigns his short service commission (June 1).

RESERVE OF AIR FORCE OFFICERS

General Duties Branch

The follg. are granted commissions in Class A.A., General Duties Branch, as Pilot Officers on probation:—H. Buckingham, E. J. Davis (May 23).

AUXILIARY AIR FORCE

General Duties Branch

The follg. to be Pilot Officer:—No. 600 City of London (Bombing) Squadron.—N. Montehore (June 7).

Pilot Officer D. H. T. Lancaster resigns his commission (June 8).

Stores Branch

Flight Lieutenants: H. S. F. T. Jerrard, to No. 1 Flying Training School, Netheravon, 15.6.27. W. A. O. Honey and J. V. Mason, to Home Aircraft Depot, Henlow, 21.5.27.

Flying Officers: A. E. Evans, D.F.C., G. J. Gaynor and F. E. R. Dixon, M.C., to Home Aircraft Depot, Henlow, 21.5.27.

THE R.A.F. MIDDLE EAST DINNER

THE Sixth Annual R.A.F. Middle East Dinner was held at the Trocadero on June 2, Air Vice-Marshal Sir W. S. Sefton Brancker presiding. Although, perhaps, the attendance was not quite so large as on previous occasions, this popular R.A.F. function was nevertheless as successful as ever. The guests of the evening were Capt. The Rt. Hon. F. E. Guest (former Secretary of State for Air) and Col. The Lord Gorell (former Under-Secretary of State for Air).

After the Chairman, Sir Sefton Brancker, had proposed "The King, The Queen, and Members of the Royal Family," Brig.-Gen. P. R. C. Groves proposed "Our Guests." It was, he remarked, satisfactory to note that the two Ministers present had not lost their interest in aviation, each being the leading Air Member in his respective political party, and staunch supporters of the R.A.F. He wanted, he added, to see the R.A.F. become—what it had proved to be for Iraq—the most efficient instrument of Government, while he also wished to see a greater acceleration in Civil Aviation.

In responding, Capt. Guest apologised for the loss of his voice—the result of a political meeting at Bristol. He would, therefore, ask his fellow guest, Lord Gorell, to speak for him. He announced, however, that he proposed buying a "Moth" for himself!

Lord Gorell, speaking on behalf of Capt. Guest and himself, made a witty speech, in which he referred to the importance of the Middle East, and to how Lieut. McNamara, R.F.C., obtained his V.C. in Palestine.

In proposing "The Chairman," Air Commodore Borton said that he regretted he was responsible for the small numbers present, as he had given only very short notice to Gen. Caddell, who had undertaken the secretarial work this time, Flight-Lieut. G. C. Anne, who usually undertook these duties, being unable to do so on the present occasion.

Sir Sefton Brancker, in responding, said that the R.A.F. were so efficient

in the Middle East that they were being reduced in numbers, so if they became more efficient, they would obviously be abolished; he suggested, therefore, that they had better create internal disturbances to provide work for themselves!

During this dinner, the Middle East Dinner Club was formed, the following officers being elected:—President, Sir Geoffrey Salmond; Vice-President, Sir Sefton Brancker; Chairman of Committee, Air Commodore Borton; Secretary, Flight-Lieut. Anne; Treasurer, Brig.-Gen. Caddell.

Amongst those present were the following:—Air Vice-Marshal Sir Sefton Brancker, Col. The Lord Gorell, Capt. Hon. F. E. Guest, Air Commodore Borton, Maj. Colin Cooper, Group Capt. MacEwen, Brig.-Gen. Groves, Maj. Guerrier, Capt. Poole Warren, Wing-Comdr. Blackburn, Flight-Lieut. Gardiner, Mr. E. H. Hereford, Wing-Comdr. Primrose, Flight-Lieut. Meynell, G. R. Morgan, Lieut. R. C. Emmett, F. C. Wood, Flying Officer Eastwood, Wing-Comdr. Jones, Maj. G. Merton, Capt. F. A. Bates, Lieut-Col. Dixon Spain, Squad-Leader Anne, Lieut.-Col. Cecil Fraser, Capt. H. Hamshaw Thomas, A. C. Lace, S. P. Yeates, F. W. Carryer, A. H. Desforages, Lieut. G. Day, Capt. A. W. Hawkins, Flight-Lieut. R. C. Preston, Lieut. R. F. M. Sheraton, Lieut. C. J. M. Whittaker, Lieut. A. D. M. Edwards, A. E. Morgan, Maj. F. D. Berridge, Capt. H. E. Drewe-Mercer, Capt. A. E. Lionel Skinner, Capt. D. F. Lapraik, Maj. Petre, Maj. H. W. Hall, M.C., Capt. S. Baker, Messrs. W. A. E. Featherstone, R. C. Williams, G. V. Williams, Wm. MacLagan, Flight-Lieut. T. O. Clogstoun, Flight-Lieut. E. Burton, Mr. H. P. S. Clogstoun, Mr. F. E. Carver, Capt. Lancaster, Dr. Rylance, Squad.-Ldr. Pretymann, Capt. Bennett Baggs, Brig.-Gen. Caddell, Mr. P. Maxwell-Muller, Squad.-Ldr. Russell, Flight-Lieut. Scholefield, Capt. Broome, Mr. R. K. Pierson, Maj. Payn, Capt. O. Vickers.

ROYAL AERONAUTICAL SOCIETY



Official Notices

Edward Bask Memorial Prize.—The Edward Bask Memorial Prize is offered annually for the best paper received by the Society on some subject of a technical nature in connection with aeroplanes (including seaplanes). The value of the prize is twenty guineas. The closing date for entries is September 30, and the closing date for the receipt of papers is December 31, 1927. Any further particulars may be obtained from the Secretary.

Associate Fellowship Examination.—Provided that a sufficient number of entries are received, the Society's examination for candidates otherwise not qualified for Associate Fellowship will be held during the third week

of September. Intending candidates should forward their entry forms as soon as possible, and in any case by August 20 at the latest.

Mr. C. R. Fairley wrote on April 13, 1927, "I have made it a rule among my technical staff that for anyone who will sit for the Associate Fellowship Examination and pass it, I will pay the whole expenses, plus entrance fee and one year's subscription."

Following Mr. Fairley's generous lead the following have intimated that they will pay all expenses in a similar way:—Mr. T. O. M. Sopwith, of the H. G. Hawker Engineering Co. Ltd.; Commander J. Bird, of the Supermarine Aviation Works; Mr. Siddeley, of Sir W. G. Armstrong Whitworth Aircraft, Ltd.; Mr. C. C. Walker, of the de Havilland Aircraft Co., Ltd.; Mr. Thomas, of the Bristol Aeroplane Co., Ltd.

J. LAURENCE PRITCHARD, Secretary.

AIR MINISTRY NOTICES

Use of Government Air Stations

It is notified that liability will not be accepted by the Air Council, its servants or agents, or by any servant or agent of the Crown, for loss or damage by accident, fire, flood, tempest, explosion or any other cause to aircraft, or for loss or damage from whatever cause arising to goods, mails or other articles or for loss or injury from whatever cause arising to passengers or other persons (including pilots, engineers or other personnel of aircraft) landing at, departing from, or accommodated in or at any Government Air Station, even if such loss, damage or injury is caused by or arises from negligence on the part of the Air Council's servants or agents or of any servant or agent of the Crown.

The use of any apparatus such as cranes, chocks, "Hucks" starters, etc., belonging to or under the charge of the Air Council by the personnel of aircraft or other persons making use of the air station will be entirely at the risk of the person using such apparatus, and no liability will be accepted for any loss, damage or injury caused by or arising from the use of any such apparatus (whether under the control or management of any servant or agent of the Air Council or of the Crown or otherwise) which may result to the user thereof or to any other person or thing. The use of such apparatus will be permitted only upon the understanding that the Air Council and the Crown will be held indemnified against all claims which may result from such use. It must further be clearly understood that the Air Council do not in any way warrant the safety or fitness of any such apparatus.

AIR PILOT.—Para. 85 of the Air Pilot is cancelled and replaced by the foregoing provisions. (No. 45 of 1927.)

NOTICE TO GROUND ENGINEERS

Avro 504, 536 and 548 types Aircraft: Fitting of Centre and Rear Longersons of Silver Spruce

1. The attention of ground engineers is directed to the necessity for ensuring that when the ash centre and rear longerons of the above types of aircraft are replaced by means of spruce of identical section, such spruce longerons are in all cases fitted with bearing plates in accordance with Drawing D729.

(Copies of the above drawing, when necessary, may be obtained on application from the Secretary [Drawings Library], Air Ministry, Kingsway, W.C.2, on pre-payment.)

2. Subsequent to the date of issue of this notice no certificate of airworthiness will be issued or renewed in respect of any aircraft of the above types unless the above precautions have been observed.

(No. 2 of 1927.)

PERSONALS

Married

FLYING OFFICER DAVID WILLIAM FREDERICK BONHAM-CARTER, R.A.F., son of Mr. W. H. Bonham-Carter, of 5, Sussex Gardens, London, W.2, was married on June 1, at St. James's Church, Paddington, to **JOYCE ANGELA PALMER**, younger daughter of the Rev. Canon and Mrs. H. J. Palmer, of 24, Warwick Gardens, Worthing.

On June 8, 1927, at Diben Parish Church, **FLIGHT-LIEUTENANT P. E. MAITLAND, A.F.C.**, R.A.F., eldest son of Surgeon-Captain P. E. Maitland, R.N., and Mrs. Maitland, Exeter, was married to **ALISON MARY**, eldest daughter of **LIEUT.-COL. and Mrs. KITTLEWELL**, Diben House, Diben, Hampshire.

REGINALD CLARENCE PRESLAND, Flying Officer, R.A.F., of Walthamstow, was married on June 11, at St. Martin-in-the-Fields, to **EILEEN**, eldest daughter of Mr. and Mrs. P. MacCALLUM, of Beckenham.

The marriage took place, on June 10, at St. Margaret's Church, Westminster, between **FLIGHT-LIEUTENANT VICTOR REGINALD SCRIVEN, A.F.C.**, R.A.F., youngest son of Mr. and Mrs. E. J. Scriven, of Ealing, and **MISS HILDA JEAN GRICE**, youngest daughter of Sir John and Lady Grice, of Melbourne, Australia.

To be Married

The marriage between **FLIGHT-LIEUTENANT JOHN W. BAKER, M.C.**, D.F.C., R.A.F., and **MISS HILARY BONHAM-CARTER**, will take place at St. Mary's, Westerham, Kent, on Saturday July 23.

The marriage of **Mr. F. F. INGLIS, R.A.F.**, and **Miss V. TURNER**, will take place on Saturday, June 18, at St. James's Church, Paddington, at 2 o'clock.

Deaths

LIEUT.-COMMANDER HAYDON M. S. FORBES, D.S.C., Flying Officer, R.A.F., was accidentally killed whilst carrying out bombing practice at Marsa, Scirocco, Malta, on June 9. At the age of 16 he took part in the famous Gallipoli landing, and was awarded the Distinguished Service Cross. Lieutenant Forbes volunteered for the Fleet Air Arm in April, 1925, and qualified as a pilot just a year ago.

WALTER HUNT LONGTON, D.F.C., A.F.C., Squadron Leader, R.A.F., of the Manor House, Upavon, Wilts, while flying at Bournemouth, June 6, 1927.

MAJ. LAWRENCE PRATT OPENSHAW, Flight Lieutenant, Reserve of Air Force Officers, while flying at Bournemouth, June 6, 1927.

THE AVIATION BALL

PRINCE HENRY and the Duke of Atholl have become Patrons to the National Fund for the Promotion of Aeronautics for the benefit of which the Aviation Ball is being held at the May Fair Hotel on June 30, when H.R.H. Prince Henry hopes to be present. The following have given their patronage to the Aviation Ball, in addition to those names already published in *FLIGHT*:

Her Grace the Duchess of Atholl, M.P., Her Grace the Duchess of Bedford, The Marquess and Marchioness of Cholmondeley, The Marchioness of Londonderry, The Right Hon. The Earl of Birkenhead, The Lord Riddell, The Lord and Lady Morris, Lord Waring, Viscount Curzon, A.D.C., C.B.E., M.P., Capt. Lord Apsley, D.S.O., M.C., M.P. and Lady Apsley, Major The Hon. J. J. Astor, M.P., and Lady Violet Astor, The Lady Margaret Douglas-Hamilton, Capt. The Right Hon. F. E. Guest, C.B.E., D.S.O., M.P., The Right Hon. Sir Alfred and Lady Mond, The Right Hon. Neville Chamberlain, M.P., The Right Hon. Sir Laming Worthington Evans, M.P., The Hon. Sir James Parr, Capt. Victor Gordon, Sir William Berry, K.C.B., Sir Harry E. Brittain, M.P., Sir Samuel and Lady Instone, Sir Frederick and Lady Lewis, Sir John and Lady Latta, Sir Harry and Lady McGowan, Sir Connop and Lady Guthrie, Sir Stanford London, Sir Harry Foster, Sir William Rayner, Lady Hulton, Lady (Arthur) Pearson, D.B.E., Wing-Comdr. Louis Greig, Lieut.-Col. W. Grant Morden, M.P., Col. H. C. Woodcock, T.D., J.P., D.L., etc., Lieut.-Col. C. E. C. Rabagliati, M.C., A.F.C., Mrs. Hilton Philipson, M.P., Lieut.-Col. Robert Loraine, Col. G. E. Stanley Smith, D.S.O., Mr. and Mrs. James W. Corrigan, Gomer Berry, Esq., Mrs. Walter Johnson, Mrs. Woods-Humphery, Mrs. F. Seymour Chalk, Mrs. Reid, Mr. J. W. Allen, Mr. Lionel Asprey, Mr. A. H. Hughes, Mr. L. Graham, Mr. W. Ogden.

An Executive Committee has been appointed to advise the Trustees in the administration of this Fund, consisting of Brig.-Gen. Lord Thomson, Capt. A. G. Lamplugh, Flight-Lieut. G. H. Reid, and Capt. F. L. Barnard.

PUBLICATIONS RECEIVED

Aeronautical Research Committee Reports and Memoranda:
No. 1055 (Ac. 238).—Tests on Handley Page Aerofoil A.1 and R.A.F.31. January, 1926. Price 1s. 3d. net. Communicated by Messrs. Handley Page, Ltd.
No. 1058 (Ac. 240).—D. M. Smith's Method for the Determination of the Transverse Frequencies of Vibration of Uniform Beams. By T. W. K. Clarke and V. M. Falkner. April, 1926. Price 9d. net.
No. 1067. (Ac. 249).—On the Contraction of the Slipstream of an Airscrew. By H. Glauert. February, 1926. Price 6d. net. H.M. Stationery Office, Kingsway, London, W.C.2.

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